MOH ED and Hospital Capacity Task Group

September 29, 2022

northern health
the northern way of caring

Foundational Work

- Care in the Right Place (nearly a decade now…)
  - Initially focused on standard acute inpatient capacity management strategies (flow boards, pt bedside boards, setting EDDs, rounding)
- Developed our co-leadership model with physicians
- Established 2 UPCCs
  - Prince George and Quesnel
- Formalized a lateral transfer escalation process
- Surge planning with ongoing refinements
- Developed a Hospital @ Home Program in Prince George
  - Intent was for medical pts, flipped to surgery due to family practice compensation issues

Strategic Direction

Coordinated Accessible Services

- Acute Care Stabilization
  - Transportation
  - Optimize acute care capacity
  - Diagnostic stabilization (focus on lab improvements)

- Leads - VP Medicine and Chief Operating Officer (NI)

Transportation

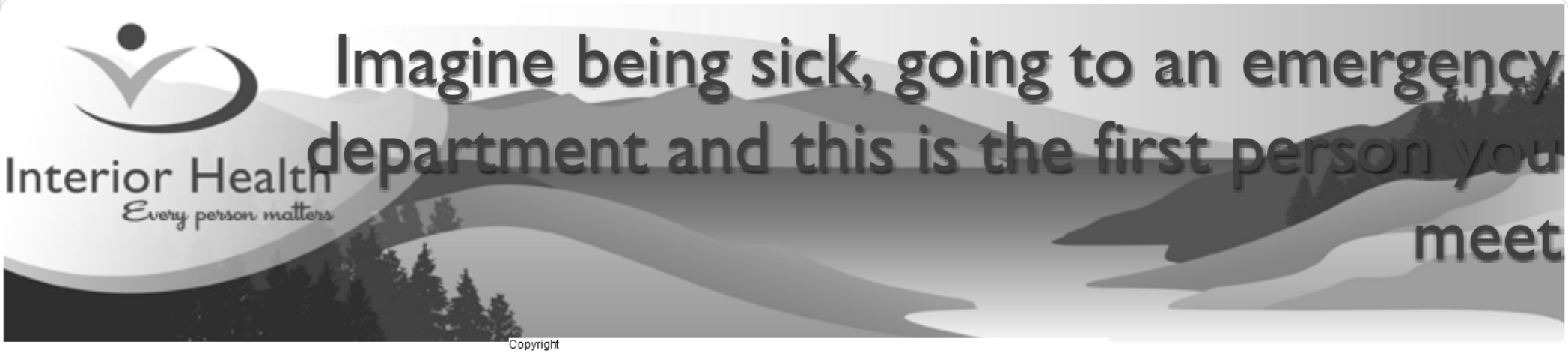
- No to low acuity transportation model
  - moving patients and staff
  - Patients for dialysis, chemo, diagnostics, repatriation
- RN transport team
  - Escorting patients to higher level of care within the region

Optimize Acute Care Capacity

- Leader standard work for complex discharges
- Escalation of problem solving (timely)
- Clinical criteria for discharge/communication of the medical plan
- Pilot Cerner Flow Management module
  - Make inpatient flow, or lack of it, visible
- Community resources
  - 24/7 and unscheduled home support
  - Redesigning LTC placement decision making and wait list management process

Promising Options

- Establish ED supports for avoidable admissions
  - For patients who are not acutely ill requiring treatment that can only be delivered in an inpatient setting
- Hospital @ Home for medical patients (when physician compensation landed)
- Increasing respite for high need community people
- Discharge with intensive services – no long term decisions made in hospital



Dr. Bruce Campana, the man, the myth, the legend…

Senior Physician At Triage

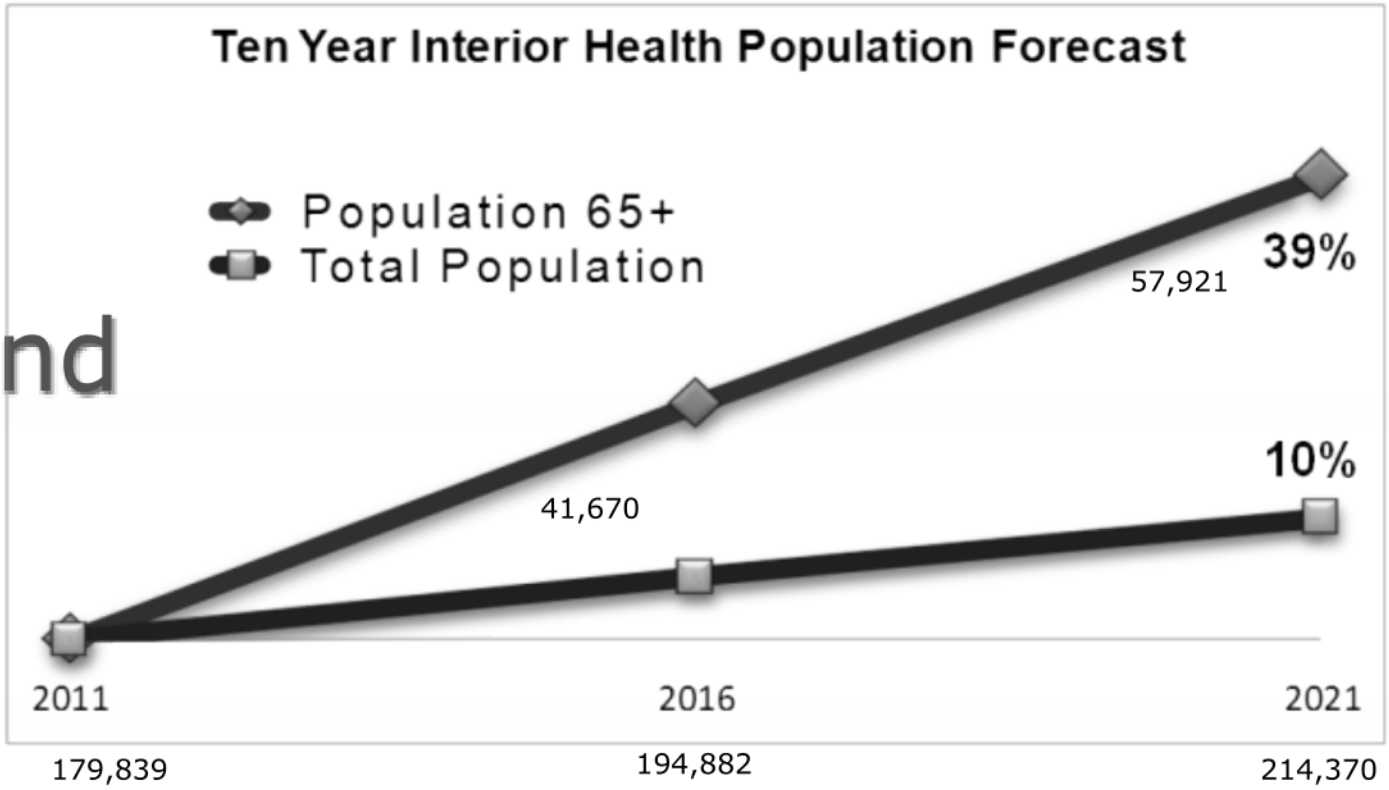
Dr. Mike Ertel
VP Medicine and Quality
Interior Health Authority

Dr. Nick Balfour
Executive Medical Director
Interior Health Authority

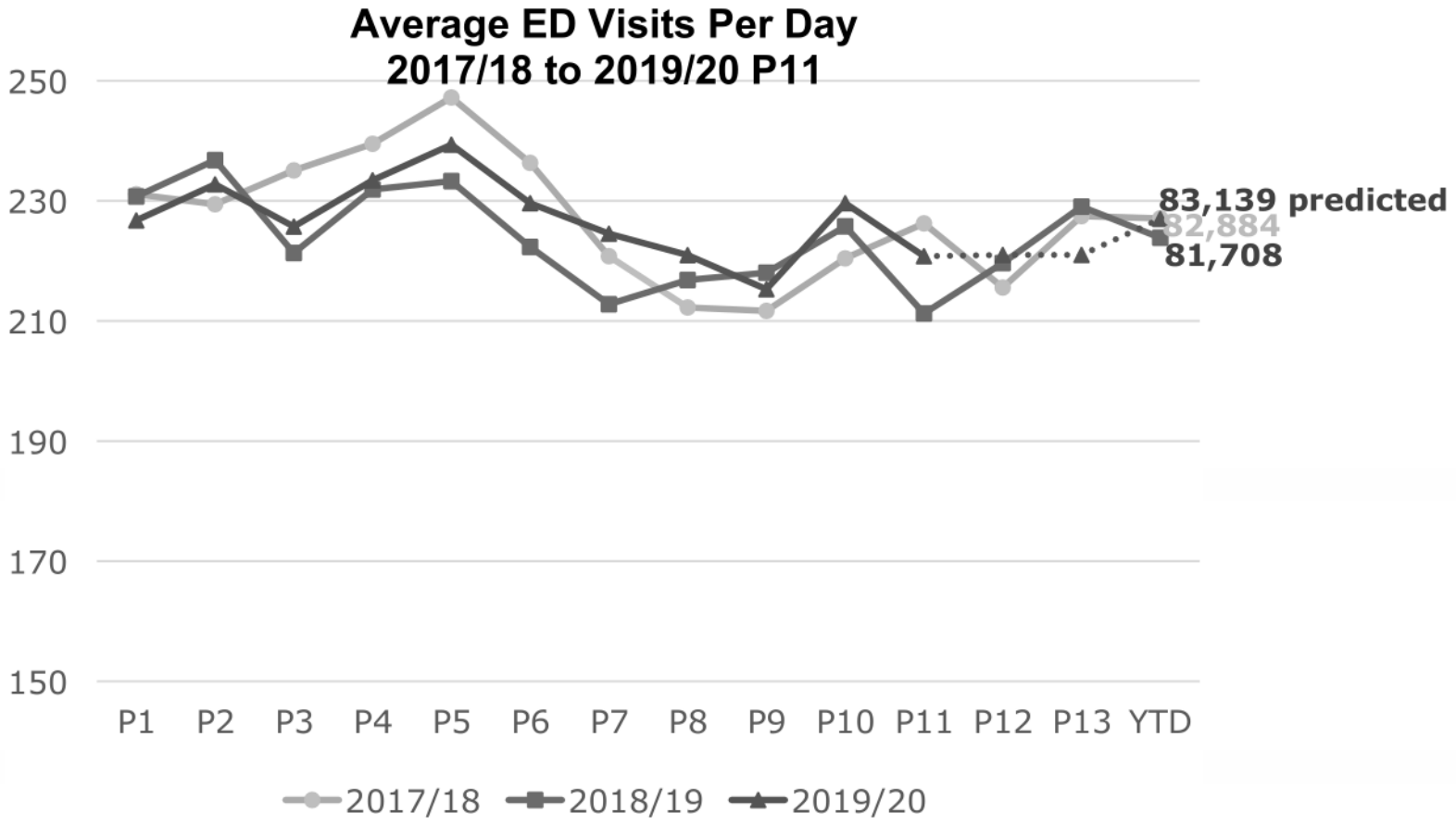
Kelowna General Hospital
2020

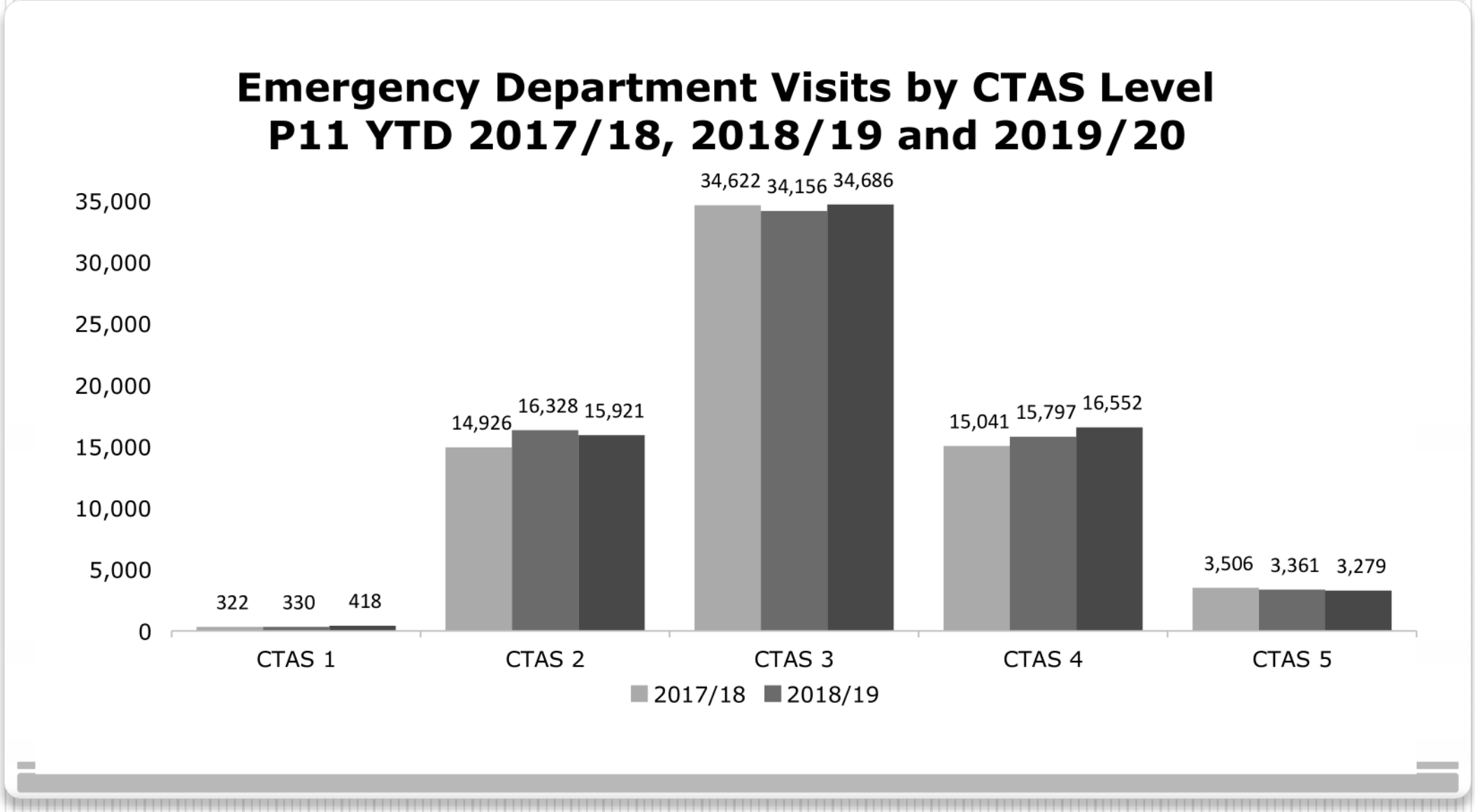
Background

- Population growth
  - Kelowna's population increased 8.4% from 2011-2016
  - In 2016, approximately 21% of the population was 65 years +



Source: 2011 and 2016 Census Profile - Kelowna CMA


Average ED Visits Per Day
2017/18 to 2019/20 P11
250
230
210
190
170
150
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
YTD
83,139 predicted
82,884
81,708
2017/18
2018/19
2019/20


Emergency Department Visits by CTAS Level
P11 YTD 2017/18, 2018/19 and 2019/20
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
322
330
418
14,926
16,328
15,921
34,622
34,156
34,686
15,041
15,797
16,552
3,506
3,361
3,279
CTAS 1
CTAS 2
CTAS 3
CTAS 4
CTAS 5
2017/18
2018/19

- As a result of a grass roots initiative led by ED Staff to improve triage processes KGH trialed a quality improvement proof of concept to address increasing patient volumes, improve Emergency Department patient flow, and time to care.

- We implemented a physician-nurse-unit clerk in Triage collaborative during the May-September long weekends 2018.

Concept

How Is the Senior Physician at Triage (SPAT) Process Different than Standard Triage?

- The SPAT is an innovative triage process
- The SPAT is flexible and adjusts its focus or use to meet fluctuating demands of the rest of the department
- The SPAT uses ongoing communication and needs assessment collaboration between ED MDs, triage RN , ED Charge Nurse , Unit Clerk and the entire SPAT team
- The SPAT has the ability to treat any acuity of patient arriving to ED based on department needs, including those requiring IV medications, inpatient admissions and even stroke codes. However, it primarily functions as a quick-care hybrid unit within the ED

Physician Role

- Assist in patient triage destination decisions in the emergency department and initiate diagnostic testing and therapeutics as soon as possible
- The priority is on higher acuity patients, including BCAS and RCMP, with the intent to initiate therapeutic interventions as well as diagnostic and laboratory investigations as early as possible
- The SPAT works in collaboration with the nursing triage team as well as the PCC to help facilitate patient flow through the Department

Physician Role

- SPAT may initiate simple interventions in triage that might negate the need for further assessment in the ED. These patients who are then discharged must register and create a medical record which is the responsibility of the PAT to complete
- SPAT can initiate referral to Urgent Primary Care Center for attachment and ongoing care
- SPAT could be a key resource in a pandemic response

Nursing Staff Roles

s.22

Triage RN Support

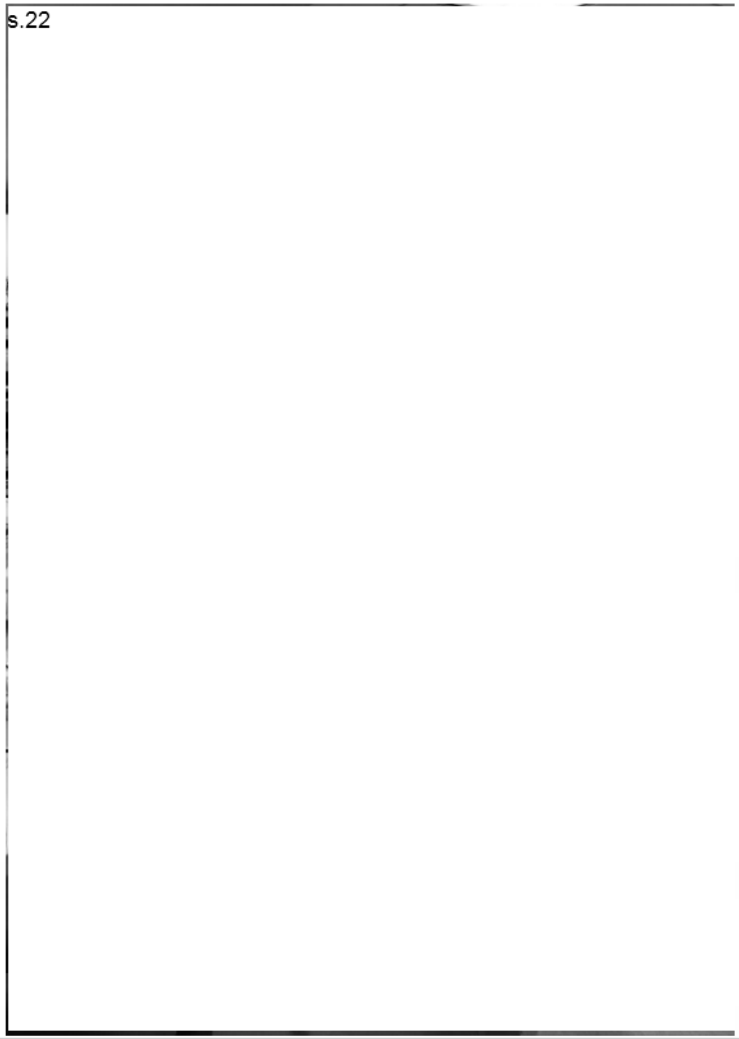
- Performs rapid triage assessment with SPAT
- Initial selective documentation of vital signs in consultation with SPAT
- Order management with SPAT for treatments/tests/labs/meds
- Performs treatments/medication administration for SPAT patients
- Manages the patient flow within waiting room, SPAT, and flow to other zones in Emergency Department

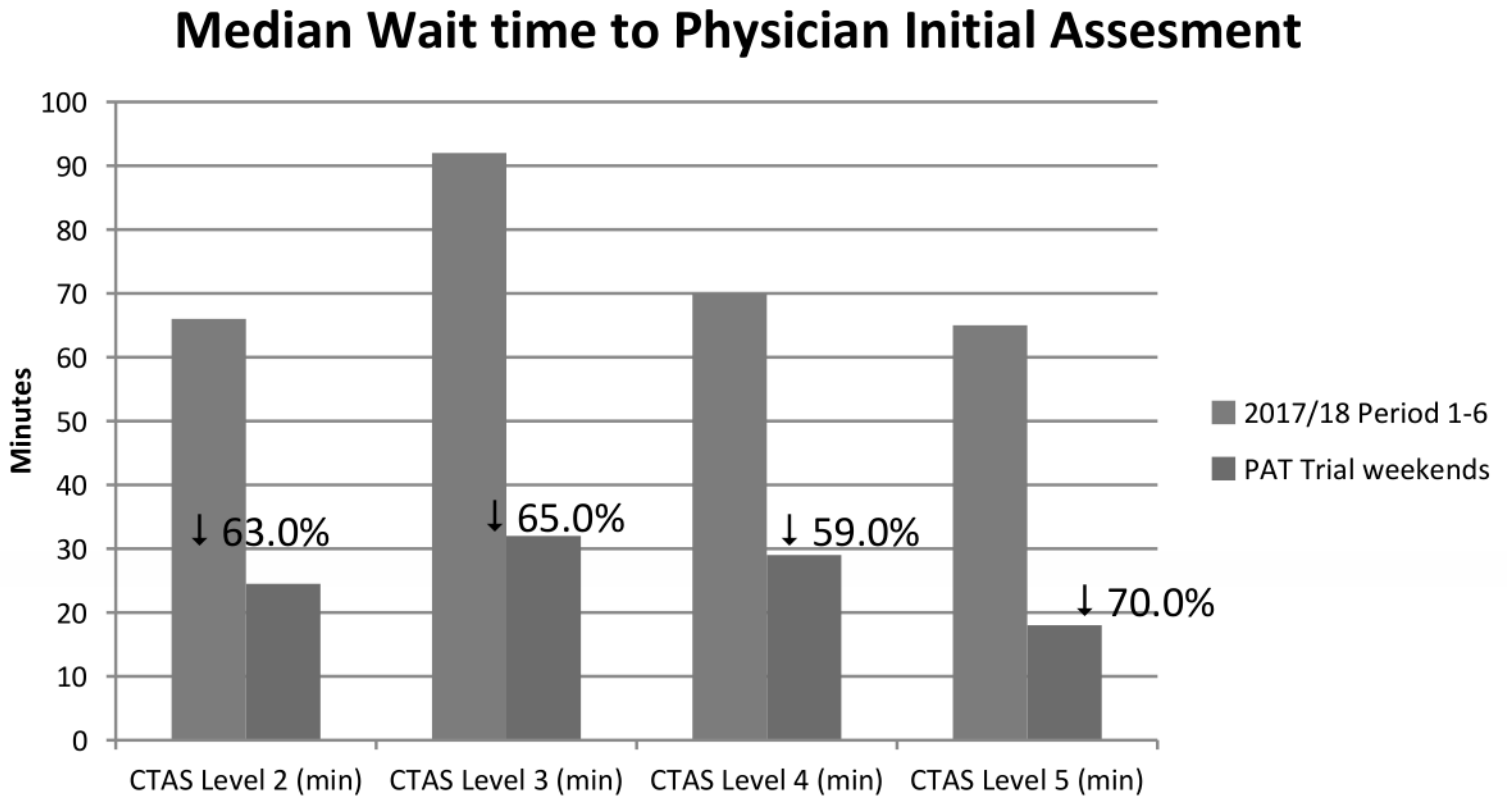
Key Goals

- Reduced Physician Initial Assessment (PIA) times
- Earlier administration of critical medical therapies
- Decrease in BCAS offload delays
- Reduced wait times and ED length of stay

Key Goals

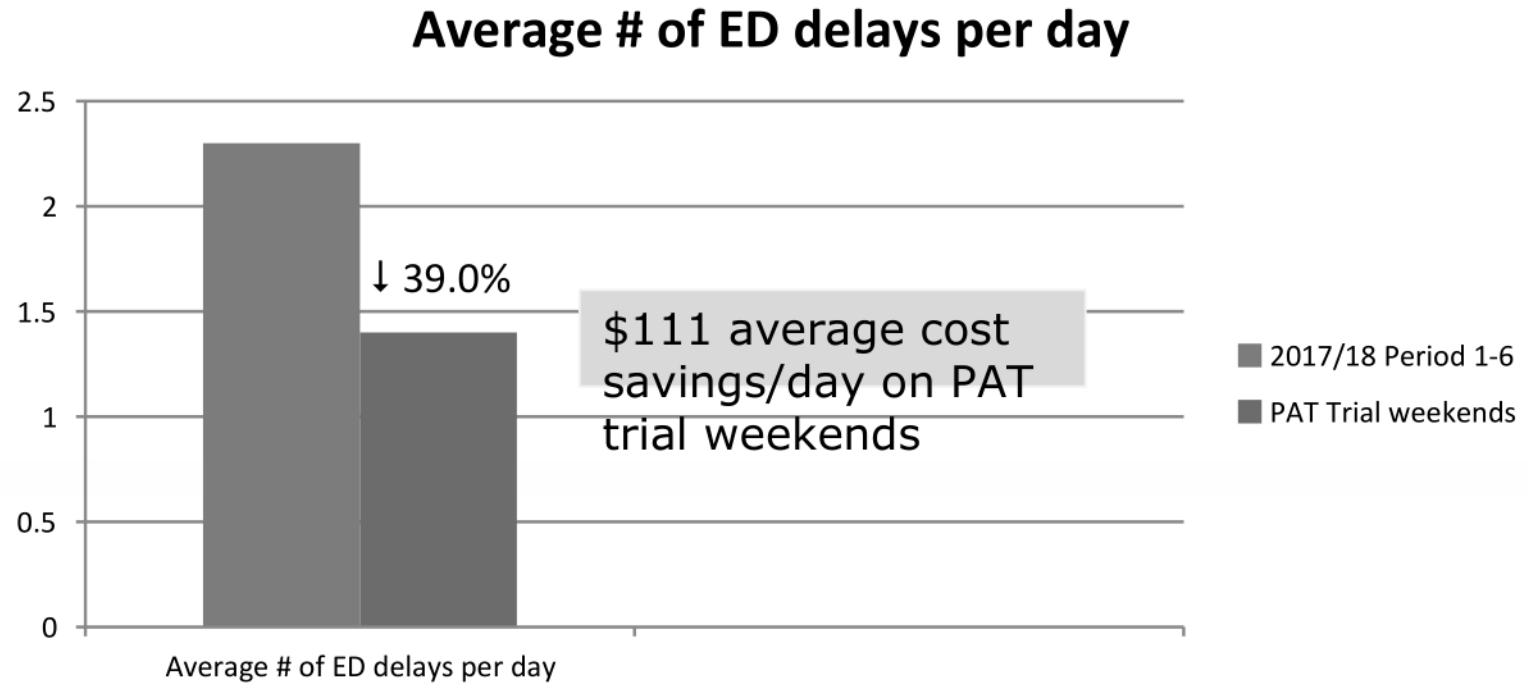
- Decrease in time to inpatient bed
- Decrease number of patients leaving without being seen
- Increase care provider satisfaction
- Increased patient satisfaction



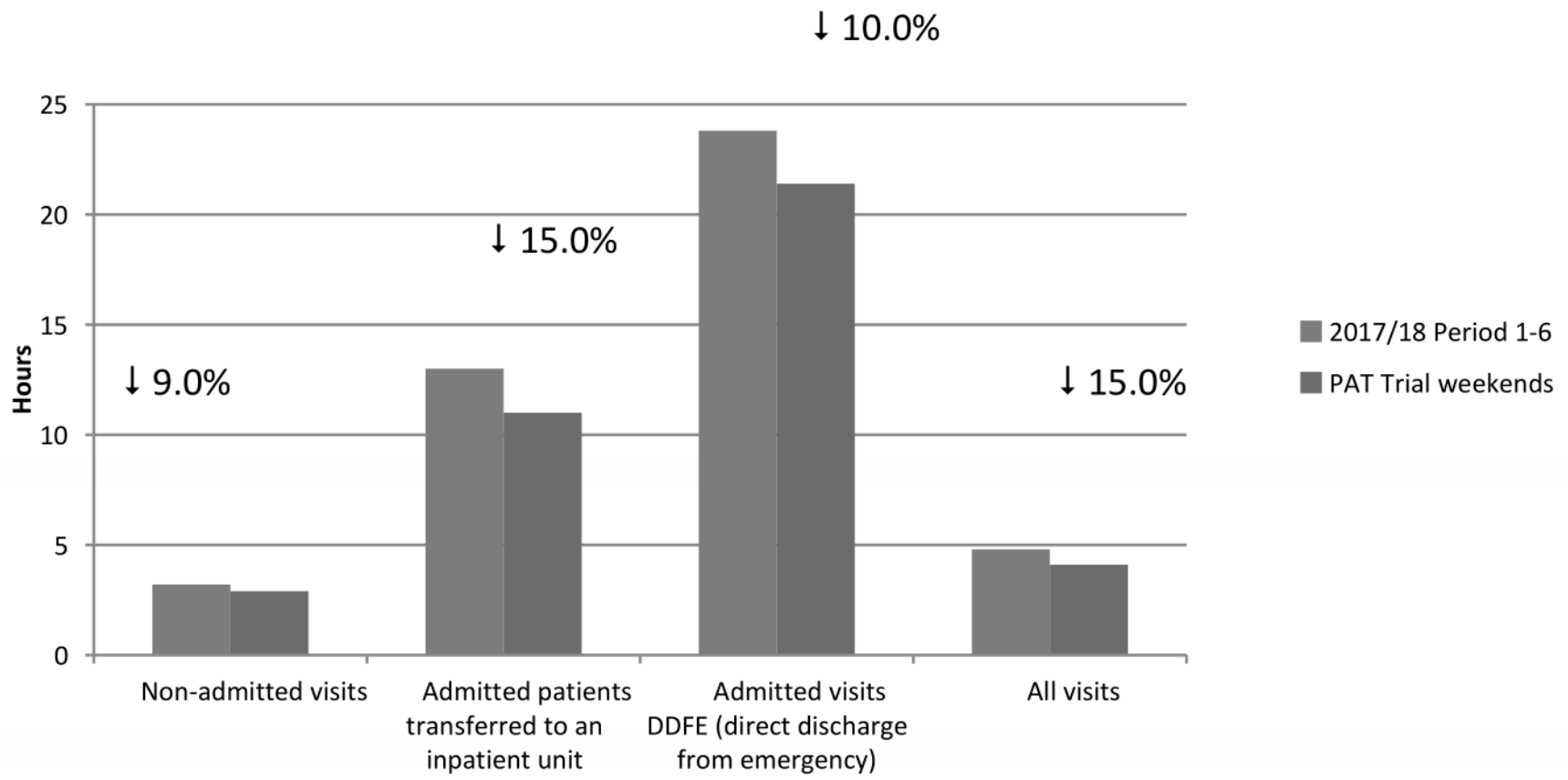


Note: Patients who encountered PAT had a PIA of 0 minutes

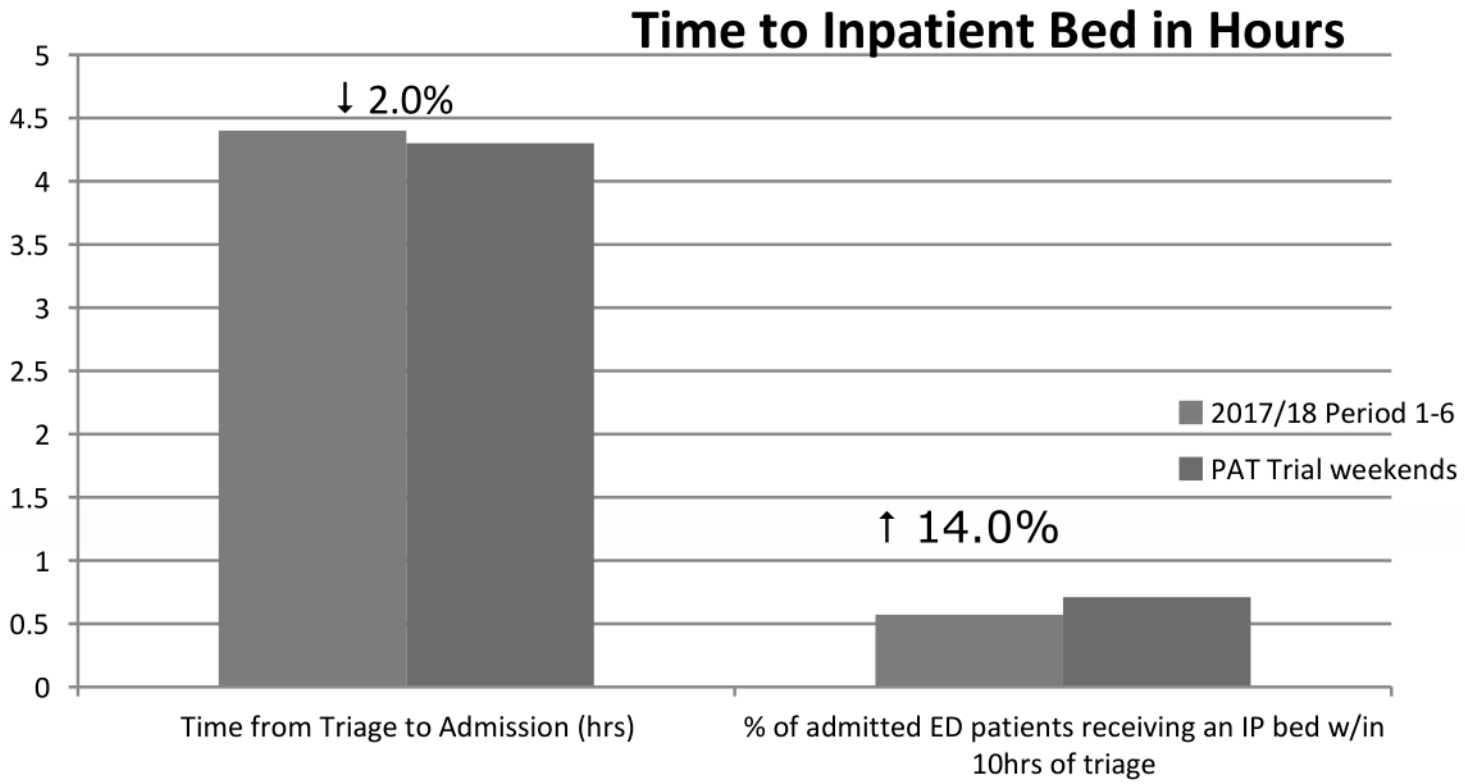
Reduced Physician Initial Assessment Time



Decrease in BCAS offload delays

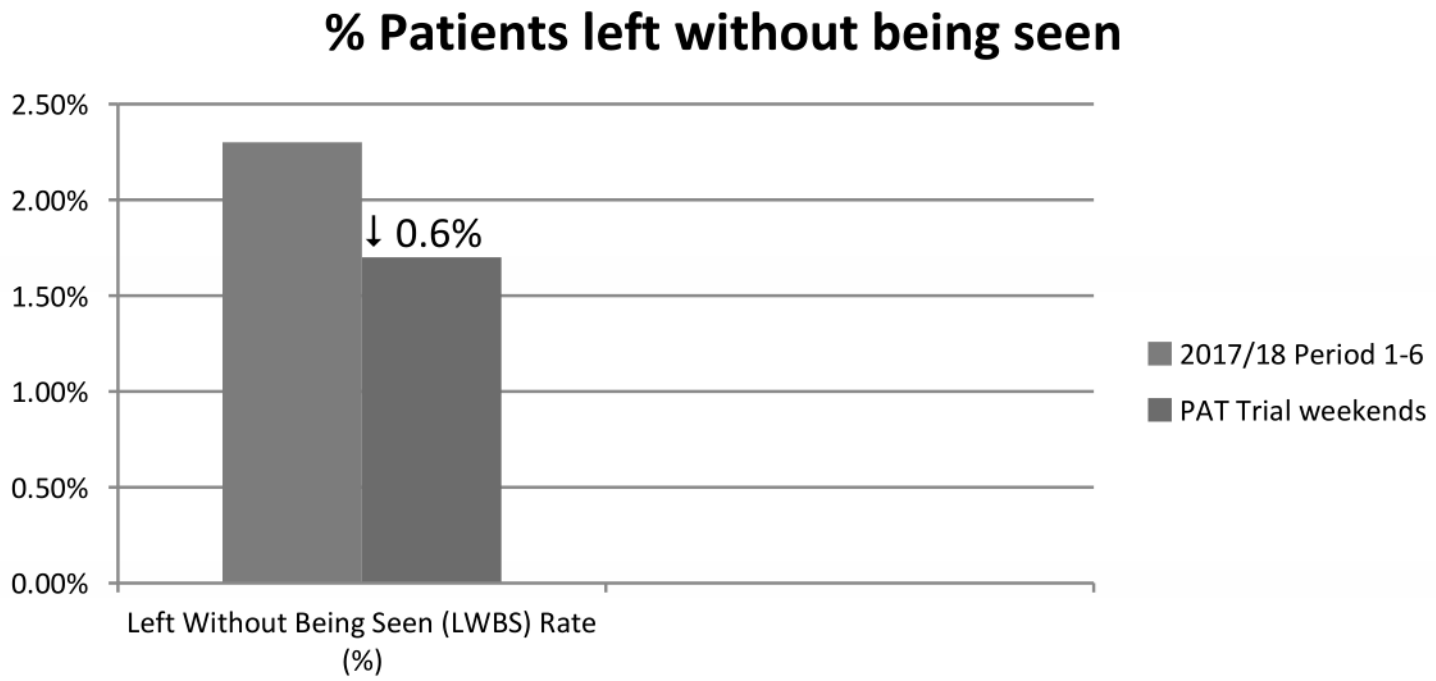


Reduced ED Length of stay



Decrease in time to inpatient bed

Decrease number of patients leaving without being seen



- *"It improves patient care, faster time to imaging and medications and provides people with early discharge options. Reduces pain by early removal of spinal precautions, early procedures (reductions, etc.). Improves staff morale, less patient and family complaints"*

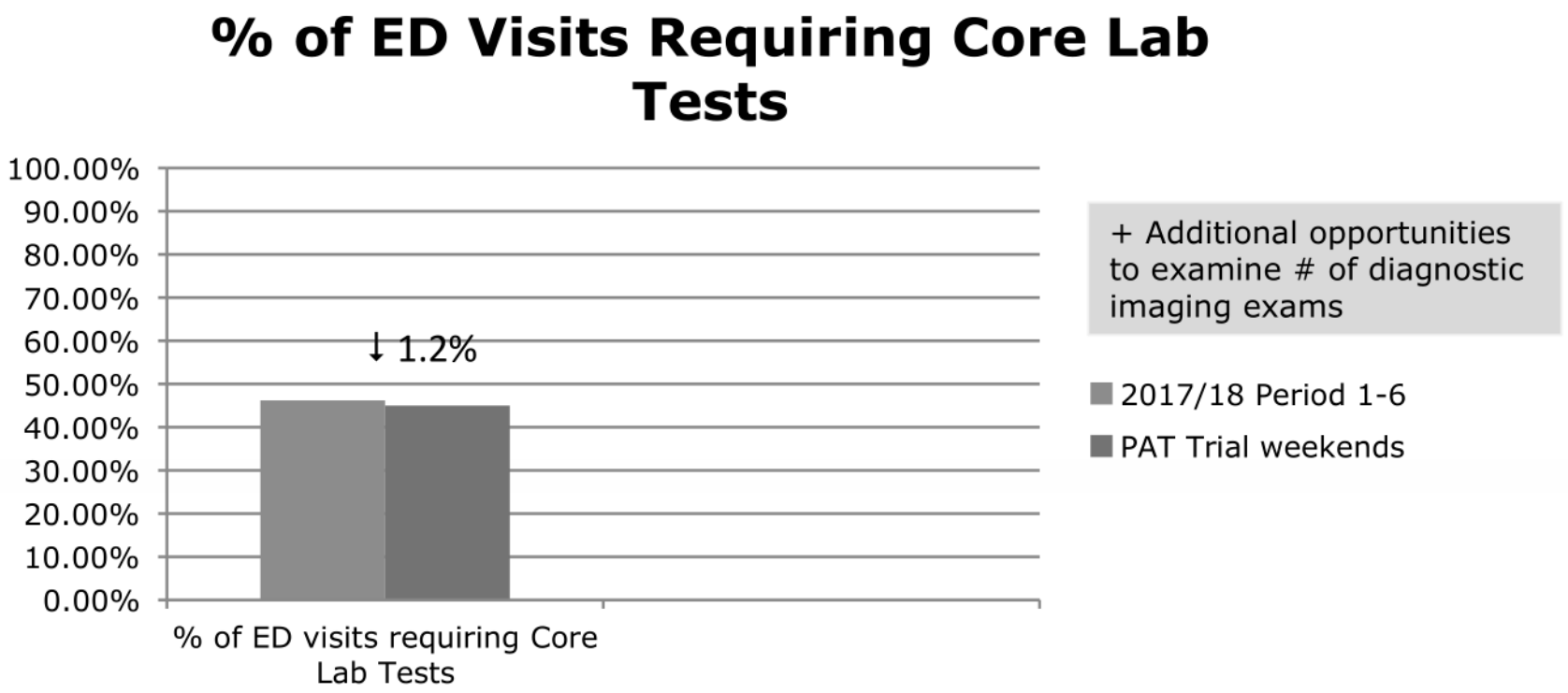
- *"It was interesting and enjoyable to work with the physicians on such a close level. It certainly helped eliminate any confusion/arguments as to where a patient was triaged to"*

- *"It made working at triage much more enjoyable and less stressful. Patients were happier due to decreased wait times to see a physician initially and to have orders done promptly"*

Inter-professional Collaboration

"I visited Kelowna arriving July 1 2017-the night of my arrival symptoms lingering from a sinus infection exacerbated to bilateral ear fullness and right ear ache with serous sang drainage. Being an ER nurse[s.22] *I was reluctant to go to ER with my ailment but being the long weekend 3 walk in clinics I checked were closed. When I arrived 4-5 people were in line ahead of me. I was triaged swiftly and professionally and an ER doc working at triage examined me, I made a chart, got my prescription and teaching and was on my way- less than 30 mins! Thank you Kelowna ER-now that is patient centered care!"*

Patient Satisfaction



Unanticipated Opportunities

ED Metric	Average		% Change
	2017-18 Fiscal Periods 1-6	PAT Trial Weekends	
Median wait time to Physician Initial Assessment:			
· CTAS Level 2 (min)	66.0 min	24.5 min	↓ 63.0%
· CTAS Level 3 (min)	92.0 min	32.0 min	↓ 65.0%
· CTAS Level 4 (min)	70.0 min	29.0 min	↓ 59.0%
· CTAS Level 5 (min)	65.0 min	18.0 min	↓ 70.0%
BC Ambulance Service (BCAS) ED Delays			
· Average # of ED delays per day	2.3	1.4	↓ 39.0%
· Average cost per day of ED delays ($)	$284	$173	↓ $111
ED Length of Stay (LOS):			
· Non-admitted visits	3.2 hrs	2.9 hrs	↓ 9.0%
· Admitted patients transferred to an inpatient unit	13.0 hrs	11.0 hrs	↓ 15.0%
· Admitted visits DDFE (direct discharge from emergency)	23.8 hrs	21.4 hrs	↓ 10.0%
· All visits	4.8 hrs	4.1 hrs	↓ 15.0%
Admission Rate (All Visits) (%)	15.8%	14.2%	↓ 1.6%
Decrease in time to inpatient bed			
Time from Triage to Admission (hrs)	4.4 hrs	4.3 hrs	↓ 2.0%
% of admitted ED patients receiving an IP bed w/in 10hrs of triage	57.1%	71.0%	↑ 14.0%
Left Without Being Seen (LWBS) Rate (%)	2.3%	1.7%	↓ 0.6%
Unanticipated Opportunities			
% of ED visits requiring Core Lab Tests	46.2%	45.0%	↓ 1.2%
# of diagnostic imaging exams per 100 ED visits	No discernable trend		

Trial Weekend Summary

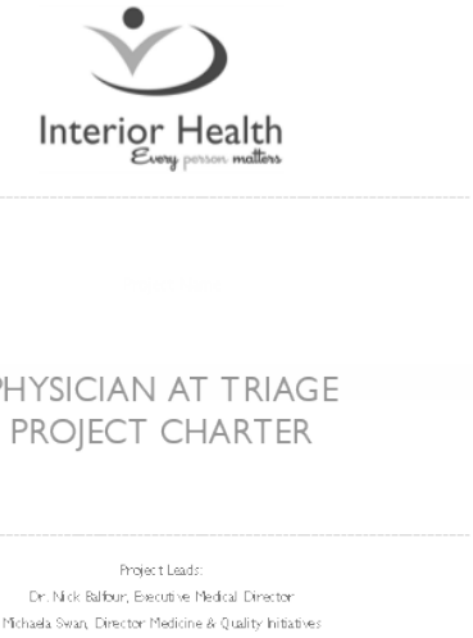
Actuals to Operationalize Proof of Concept

Provider	Hours worked	Cost
ED Physician	343 hrs	$50,865
Registered Nurse	88 hrs	$3697
Unit Clerk	112.5 hrs	$2500
TOTAL		**$57,062**

* Physician costs include FFS assigned to IHA as of January 19, 2018
* During the trial weekends only 15/16 Unit Clerk shifts were filled and 8/16 RN shifts were filled

Planning Stages

- VP sponsorship:
- Dr. Mike Ertel
- ED lead engagement and upstaffing
- Ministry engagement re compensation model : complete awaiting final decision



Alignment with Strategic Plan

- Improve Health and Wellness

  Deliver patient and family centered care by physicians at triage

- Deliver High Quality Care

  - PAT will support providing efficient, effective acute services that are linked across a coordinated system of care to meet individual health-care needs
  - Deliver evidence informed quality and safety initiatives, using a literature review of previous PAT experiences in healthcare around the world

Alignment with Strategic Plan

Ensure Sustainable Health Care by Improving Innovation, Productivity, and Efficiency

By implementing an innovative approach and service delivery model

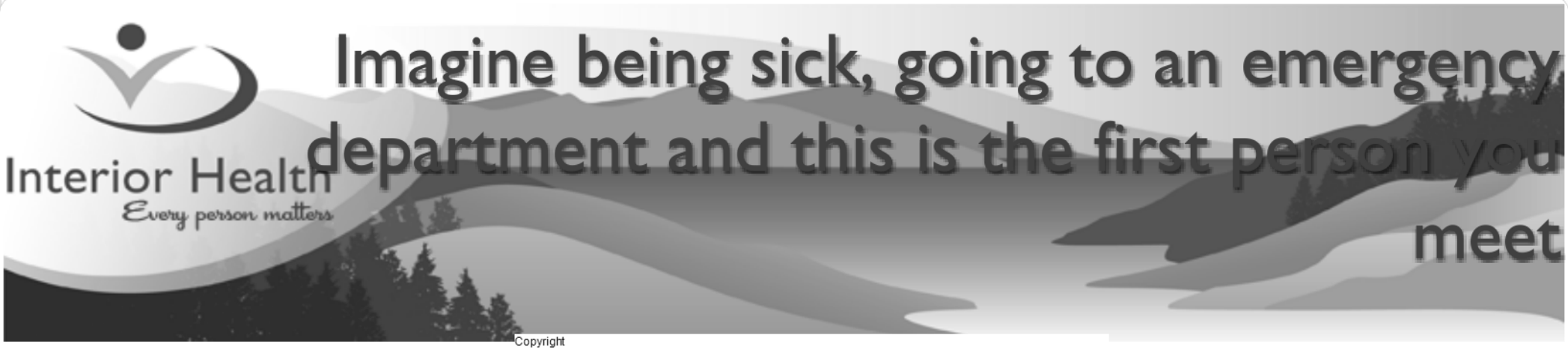
Cultivate and Engaged Workforce and a Healthy Workplace

PAT is a physician led initiative, and leadership at both sites will assist in developing medical leadership capacity

Provider	Hours/day	Headcount per day	Cost
ED Physician	14 hrs	2.0	$315,000
Registered Nurse	12 hrs	1.0	$80,000
Unit Clerk	12 hrs	1.0	$40,000
TOTAL COST			**$435,000**

* Physician costs are based on a clinical service contract. Does not include a 20% FFS recovery assigned to IHA.
* Staffing costs are based on 7 day/week service running 90 days, including benefits and relief.

Cost to Operationalize 3 months at KGH



Dr. Bruce Campana, the man, the myth, the legend…the Sauder graduate!

Thank you.

Interior Health
Every person matters

PHYSICIAN AT TRIAGE PROJECT CHARTER

Project Leads:
Dr. Nick Balfour, Executive Medical Director
Michaela Swan, Director Medicine & Quality Initiatives

CONTENTS

Revision History

REVISION DATE	REVISION REASON	REVISED BY
June 18, 2018	Created	Michaela Swan

Executive Summary

This project will be used to expand the clinical trial of Physician at Triage to two tertiary emergency departments (ED) within Interior Health (IH). In December 2016, a Rapid Process Improvement Workshop (RPIW) was conducted at Kelowna General Hospital (KGH) to mitigate ED overcrowding associated with prolonged wait times, overall patient dissatisfaction, decreased physician productivity, and increased ambulance diversion. During this RPIW healthcare providers were given an opportunity to address a number of these issues in the KGH ED triage areas.13 s.13 As a result, the KGH site trialed a Physician at Triage (PAT) to determine if this would alleviate some of the concerns noted above.

The PAT was trialed on April to September long weekends during peak hours (10:00-22:00) at KGH. The following indicators were examined:

- Reduced PIA times
- Decreased in British Columbia Ambulance Service (BCAS) offload delays
- Reduced wait timed and ED lengths of stay
- Decrease in time to inpatient bed
- Decrease number of patient left without being seen
- Increase care provider satisfaction
- Increase patient satisfaction.

All seven of these indicators were improved during the proof of concept trial period.

Based on these promising results, the IH Senior Executive Team and Board of Directors have endorsed a phase two pilot project to proceed in 2018 at both tertiary site EDs in IH, Royal Inland Hospital (RIH) and KGH.

1. Project Purpose

Business Need

Emergency Departments at RIH and KGH have been consistently working on improvement strategies to tackle increasing volumes, needs of patients and improved access and flow through the departments. The PAT Phase 2 Pilot Project is considered another strategy that has the potential to provide an improved service delivery model to patients, as well as increase efficiencies and utilization of ED resources. Given the increasing rates of ED visits at RIH and KGH (see Figure 1

below), exploring unique ways to best utilize resources and efficiencies while providing safe and quality care to patients must be explored.

Figure 1. KGH and RIH Emergency Department Volumes 2014-2018

Hospital	2014-15	2015-16	2016/17	2017/18	Avg. Incr.
KGH	69,640	75,951	81,461	s.13	
RIH	64,498	68,540	70,277		
Total	134,138	144,491	151,738		

Business Objectives

The business objectives for this project are to provide a PAT to attend to a defined patient criterion in order to:

1. Improve patient outcomes by improved physician initial assessment times on possible stroke, ST-Elevation Myocardial Infarction (STEMI), and sepsis patients
2. Improve Physician Initial Assessment times in the Emergency Department
3. Improve access to health care by decreasing the number of patients left without being seen
4. Reduced pressure on the emergency department
5. Create cost savings by decreasing BCAS offload delays
6. s.13
7. Decrease time to inpatient bed
8. Improve patient experience
9. Improving care provider satisfaction

These objectives are in direct support of our strategic plan to:

1. Improve Health and Wellness
   - Deliver patient and family centred care by physicians at triage
2. Deliver High Quality Care
   - PAT will support providing efficient, effective acute services that are linked across a coordinated system of care to meet individual health-care needs
   - Deliver evidence informed quality and safety initiatives, using a literature review of previous PAT experiences in healthcare around the world
3. Ensure Sustainable Health Care by Improving Innovation, Productivity, and Efficiency

- By implementing an innovative approach and service delivery model

4. Cultivate and Engaged Workforce and a Healthy Workplace
    - PAT is a physician led initiative, and leadership at both sites will assist in developing medical leadership capacity

2. Project Description

This project will provide the staff, physicians and project team to study the impacts of the PAT service delivery model at KGH and RIH.

The goal is to implement a PAT service delivery model (see Appendix A),s.13
s.13

There must be a defined PAT service delivery model to ensure consistency at KGH and RIH to ensure best outcome for evaluation, however identification of differences will be important to note (i.e. recent opening of Urgent Primary Care Centre on RIH campus).

AIM Statement:

Over a 12 week pilot project period, we will:
s.13

Requirements

This project must meet the following list of requirements in order to achieve success:

1. Assign a Project Lead and Executive Medical Director to ensure the project is implemented and studies to meet the objectives and timelines
2. Form a working group between KGH and RIH to ensure applicable knowledge, responsibility and accountability for services are available to the project

3. Analyze the current services, required services for PAT and identify any gaps
4. Align the project with Ministry of Health policies and IH strategic direction
5. An approved budget, to include all services and staff to support project

Additional requirements may be added as necessary, with project sponsor approval, as the project moves forward.

Constraints

The following constraints pertain to this project:

1. The timelines to complete the pilot project by the fall of 2018 are set, and the project team must deliver results by the year-end of 2018.
2. The budget for this project is waiting for final approval from the budget management process, $1,397,000. The project must be delivered within budget.
3. The physician compensation model must follow the guidelines set by the Ministry of Health and Health Employers Association of BC.

Assumptions

List the assumptions the project team will be working under as the project goes forward

The following are a list of assumptions. Upon agreement and signature of this document, all parties acknowledge that these assumptions are true and correct:

1. The Physician at Triage Pilot Project is a physician led quality improvement project, supported by IH Senior Leadership and IH Board of Directors.
2. Site specific leadership has operational oversight of Phase 2 PAT Pilot Project implementation, supported by working group.
3. The Physician at Triage Pilot Project staff (registered nurse and unit clerk) will be managed by site specific IH leadership.
4. Patients will always receive the most appropriate care when attending the emergency department.

Preliminary Scope Statement

In Scope

The scope of this project includes:

1. Analysis of the requirements to deliver a PAT service delivery model.
2. Implementation planning to deliver a PAT service delivery model.
3. A triage process to identify target patients to most appropriate service within the ED.
4. Appropriate re-allocation, employment and training of required staff.
5. Evaluation plan and execution.

Out of Scope

The following items are out of scope and provided here to help clarify the scope boundaries of this project:

1. Provision of other ED Services.
2. Provision of Surgical Services.
3. Other emergency departments not defined in this document.
4. Provision of any service(s) not defined in this document.
5. Provision of any services for patients outside of usual provision of care.
6. Any other item that is not in scope.

3. Risks

The following risks for the project have been identified. The project manager will determine and employ the necessary risk mitigation/avoidance strategies as appropriate to minimize the likelihood of these risks:

1. Physician Compensation Model
2. RN staffing at RIH
3. Physician resourcing at RIH and KGH
4. Funding Approval
5. Availability of data, and baseline indicators to support evaluation

4. Project Deliverables

The following deliverables (where applicable) must be met upon the successful completion of this project. Any changes to these deliverables must be approved by the project sponsor.

1. Clear definition of IH PAT Service Delivery Model
2. Completion of 12 week PAT service delivery model pilot project
3. Complete evaluation

5. Summary Milestone Schedule

This section provides an estimated schedule of all high-level project milestones.

The project Summary Milestone Schedule is presented below. As requirements are more clearly defined this schedule may be modified. Any changes will be communicated through project status meetings by the project manager.

Project Milestone	Target Date
• Project Charter agreed and signed off	Click here to enter a date.
• PAT budget approval	Click here to enter a date.
• Clearly defined PAT Service Delivery Model	Click here to enter a date.
• PAT implementation plan	Click here to enter a date.
• PAT evaluation plan	Click here to enter a date.
• PAT implementation	3-Aug-18
• PAT evaluation analysis	Click here to enter a date.
• Presentation of project completion to SET and Board	Click here to enter a date.

6. Summary Budget

The following table contains a summary budget based on the planned cost components and estimated costs required for successful completion of this project.

Project Component	Component Cost
• Physician Compensation **current estimate, negotiations ongoing*	$481,000
• RN (7 days/12 hours with relief) for RIH and KGH	$616,000
• Unit Clerk (7 days/12 hours with relief) for RIH and KGH	$300,000
Total	**$1,397,000**

7. Success Criteria

This project will be deemed successful when all the objectives have been met as specified in section 1 plus the following:

1. On Time
2. On Budget
3.

8. KEY STAKEHOLDERS

Executive Sponsor **Dr. Mike Ertel**	• Sponsors the business case • Primary advocate for the project • Ultimate decision maker for the project • Supports the Project Sponsor and Project Manager • Has final approval of all scope changes • Signs off on all approvals • Represents the project at Executive level meetings
Project Sponsor **- Dr. Nick Balfour**	• Makes the business decisions for the project. • Participates day to day in one or more projects (may utilize subgroups) • Makes user resources available • Approves work products • Disposes of issues and change requests • Escalates to the Executive Sponsor (coordinated with the Project Manager) issues and changes that are outside Project Manager and Project Sponsor's authority. (e.g. scope change requiring additional capital expenditures.) • Approves project deliverables • Participates as the change agent in the change management plan • Acts as a communication liaison between the project team and the business area.
Project Manager **- Michaela Swan**	• Controls the day-to-day aspects of the project • Performs project management process • Develops Project Charter, Plan and Budget • Executes formal reviews • Tracks and disposes of issues • Escalates to the Project Sponsor issues and changes that are outside the Project Manger's scope • Tracks action items and budget
Working Group Members	Project Members: Dr. Nick Balfour, Executive Medical Director Michaela Swan, Director, Medicine & Quality Initiatives Morag Green, Quality Improvement Consultant, RIH Reed Scott, Quality Improvement Consultant, KGH RIH Site Specific: Dr. Todd Ring, Chief of Staff Dr. Hank van Zyl, RIH ED Department Head Dr. Alan Vukusic, ED Physician Project Lead Richard Jewitt, Health Service Director

	Mike Rickson, ED Manager KGH Site Specific: Dr. Nick Balfour, Acting Chief of Staff Dr. James Reid, KGH ED Department Head Dr. Jamie Powell, Resident John Cabral, Health Service Director Rhonda Porter, ED Manager Dorrie Fasick ED site lead Ad Hoc: Gina Sloan, Corporate Director Medical Affairs (Physician Compensation)

9. Sponsor Acceptance

Approved by the Executive Sponsor:

_____ Date: _____

Dr. Mike Ertel

VP Medicine & Quality

Approved by the Project Sponsor:

_____ Date: _____

Dr. Nick Balfour

Executive Medical Director

Appendix 1 – PAT Service Delivery Model

Final Physician at Triage Trial - Follow up

September Long Weekend 2017

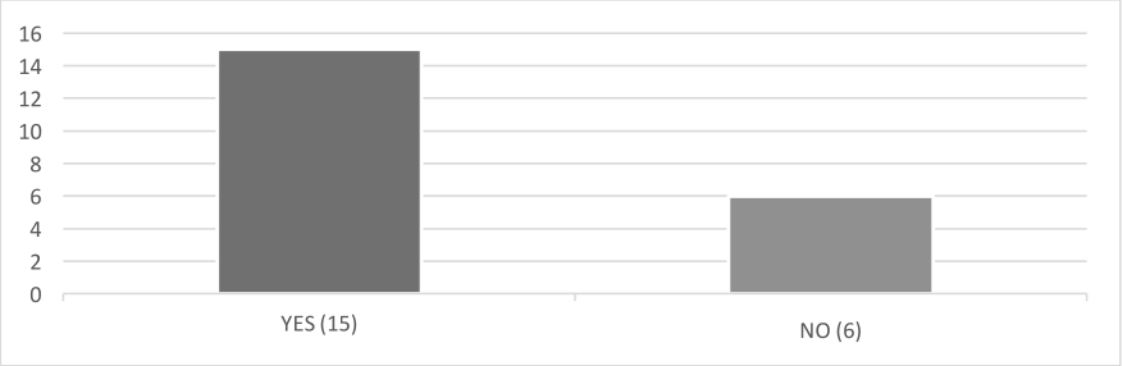
Abstract

Over all of the long weekends, from Easter to Labour Day, in 2017, our Emergency Department had a Physician at Triage hoping to alleviate some of the pressures long weekends bring us. The feedback we have been hearing has been positive. This is a summary from our final Physician at Triage Trial from September 1-5, 2017.

Dorrie Fasick, RNBN, PCC ED – Kelowna General Hospital

dorrie.fasick@interiorhealth.ca

1. Did you work any shifts during this Physician at Triage trial? September 1-5 10:00-22:00?



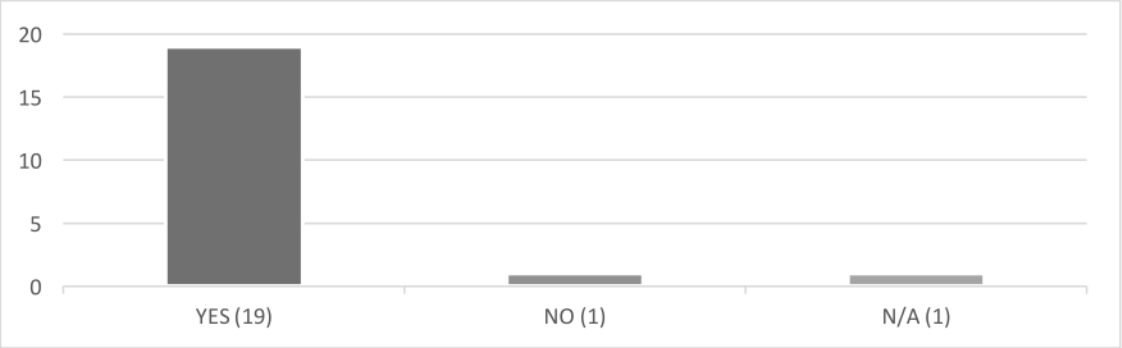
2. Besides the September trial, did you work any shifts during any of the previous trials? If yes, please indicate where in the department you worked during the trial.

Comments:

1. triage/main
2. Triage
3. streaming
4. Triage Streaming
5. triage 1 and Triage 2 both, as well as a few shifts in Streaming while there was PAT
6. Streaming, Main ED
7. Triage, Streaming
8. triage
9. Triage clerk, and regular Unit Clerk hours
10. Yes, worked other physician at triage shifts earlier in the year
11. Triage
12. triage, streaming, main
13. triage and streaming
14. Triage 1 & Triage 2
15. triage, streaming

16. Triage and Main
17. Break coverage for the unit clerk at triage/MT unit clerk/Float clerk
18. STREAMING AND TRIAGE
19. Streaming, Main
20. NAT for August long weekend

3. In the areas in which you worked during the Physician at Triage, do you feel there was any direct impact to those areas?



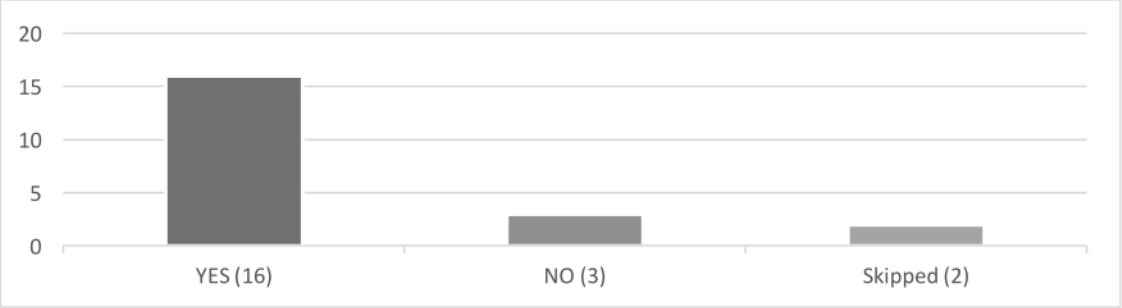
Comments:

1. Patient came with orders to start in main beds, was important to communicate to staff that the PIT would not follow up and chart needed to be put up to be seen for main dr
2. Triage- Patients were assessed quickly as needed by physician, patients had physician assessments, DI tests, lab tests and interventions completed quicker, some patients discharged right from triage, patients assessed and discharged from main WR. Streaming: Increased workload for nurses in streaming, especially workload of patients waiting in streaming WR. Patients are receiving care, DI tests, IV's, and lab work in a quicker fashion however no increase time to physician assessment. Some patients are discharged quicker due to care being provided from wait room through triage physician orders. Definite increase in workload for nursing in streaming!!!
3. At triage there were several positive impacts - people who did not need to be in the ER were sent home (ie. you don't need stitches for that, that is not infected, here's your simple prescription, your child is fine), plus patient's really appreciated that they were seeing a physician that quickly. In streaming, it was also very helpful, as waiting times to see a dr in streaming can be quite long, but patients arrive with orders for BW, imaging, analgesics and the nurses are able to get started. resulting in way less agitated patients. Very very helpful for the staff and patient's both!! However, it did slow the triage nurse down somewhat. I felt that, as with anything, it was pretty dependent on who the doctor was, but I did notice that the physicians themselves at first needed to adjust to a slightly different role, but that they definitely got better and quicker as the trial shifts progressed.
4. I do feel that I was able to provide treatment to those in streaming faster than normal however during both the August and September trial there were times where we were so busy that the initial orders provided by the physician at triage were not able to be completed for at least 2 hours.
5. In triage, it was great to get orders done that could be initiated there. In streaming, the orders from triage were great to get the process going for the pt but ONLY if there were sufficient staff to allow the orders to be done!!!!
6. Triage times for triage 1 took a bit longer d/t physician assessment time. The physician sometimes told me I didn't need to do a spO2 on a child going to MTA for sutures; or that I could omit various other vital signs (most temp and spO2) on other patients to keep the line-up moving; but I felt it was compromising my practice of doing a full set of vitals on every patient regardless of their complaint -

as I was taught in my CTAS training. The triage assessments were a bit awkward at times with some questions being asked multiple time by both nurse and physician as one was writing/doing vitals/not listening. The physician got up to go see a BCAS pt and the pt I triaged next was asking why the doctor wasn't going to see them right away; which escalated a bit when the pt was told they would be seeing a different doctor. An out of country pt was triaged and told by the physician at triage he didn't need xrays etc; rather than register and pay the fee afterwards, the pt just left.

7. Being the triage clerk, I have found that the Triage Nurses like having a clerk to work with, streaming clerks appreciate the charts being processed ahead, and the streaming clerks had a less heavy load. The extra streaming clerk is not needed if there is a Triage Clerk
8. I think time to diagnostics and treatment was certainly improved. Patients received treatments (nebs, pain mgmt, iv fluids) promptly. However, was highly dependent on a nurse being assigned to those specific orders.
9. Some orders were missed, patients had orders processed, completed and these were occasionally missed by the staff
10. Expedited care!
11. I felt that the PAT didn't show any significant change in patient care other than having orders initiated for those patients waiting for streaming/BCAS holding. Other than these two areas, I felt it was redundant as the patients are seen in a timely manner. I feel that the doctor would be better utilized as another float.
12. Made it more streamline
13. Flow through triage 1 was incredibly productive and efficient... almost couldn't keep up
14. In triage & streaming, patients received diagnostics & pain medication sooner. However, there was also a correlated increase in workload to fulfill those orders. The PAT nurse coverage was not always available due to staffing shortages, increasing the workload to both triage & streaming. Also, a need was identified for a clearer role for the PAT nurse who follows the PAT. A suggestion was made that the PAT nurse "goes where the orders go", helping to alleviate the workload on those areas where most PAT orders occur.
15. Triage was more backed up. More pt's were cleared and sent to MT over main to be assessed but ended up in the Main by the end of the day.
16. It was good to have the x-rays ordered and some pain meds or nausea meds ordered so that the patient care was quicker, however there are some issues with patients understanding the flow of the Doctors. Many patients were confused about seeing one doctor and felt like were forgotten when they didn't see the same doctor. Also, needing better communication when the doctor discharges a patient directly from triage and if they are ordering IV meds and discharging afterwards needs to be written clearer for the flow.
17. Some streaming issues. When patients are ordered imaging from Triage and brought back to streaming by porter, the porters are used to replacing the chart in the rack behind the UC - meaning patient gets lost in the mix and not assessed by streaming physician. This has happened several times during the PAT trials. I think charts need to be given to the nurses in order to properly check patient in.
18. Working as the assistant to triage, I was able to complete basic tasks such as return IV antibiotics, dressing changes and tetanus shots that would go to various areas and sit for multiple hours. They were completed in a timely manner and discharged promptly allowing only the patients that needed the areas to proceed

4. Overall, do you feel that the Physician at Triage improved flow within the department?



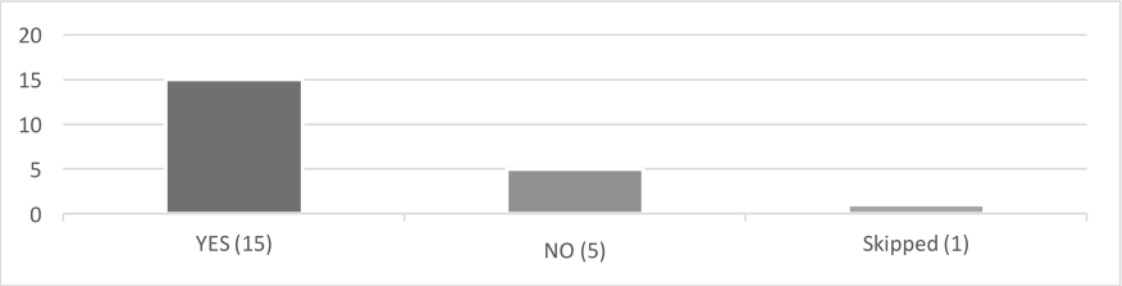
Comments:

1. Discharges at triage, tests started sooner (x-ray/US/CT/meds)
2. I feel patients were seen faster and had a quicker turn over
3. When patients who did not need to be in the ED were discharged at triage and when patients who required certain lab work or XR had these completed by the time the physician saw them, the length of stay seemed to be shorter.
4. Orders are allowing patients to receive faster treatment, in most cases
5. It was sometimes helpful in directing patients to which area would be most appropriate. There were times however when the physician would suggest a main/monitored bed for a pt that would normally go through streaming. It seemed as though the physician would write the order for "main bed" with a few orders for labs/diagnostics and then their hands are washed of it; and it becomes a workload problem for triage 1 as they wait in the WR for an available bed, when really they could've been assessed and treated appropriately in streaming. The physician got into a mental health conversation with a pt at triage 1 which wasn't entirely necessary as the information gathered did not go toward helping the doctor that would eventually see the patient; rather it just held the line up for a long time.
6. Unsure if it improved the flow, it definitely was used to "treat and street" so pt's were seen in a timely manner, concerns dealt with, and after registration they were on their way, no impact to the department which is very helpful for the flow.
7. No real difference really. It did not alleviate the problem which is congestion. Orders might get processed faster but we can still be lacking bed space
8. I feel that it does not improve the flow. Patients have been triaged to the wrong area simply because the PAT dictated. It causes a "bottle neck" at triage as the whole process is slowed down because the doctor is wanting more information or starts the triage process before the triage nurse is ready as they are doing the pre-registration process.
9. In some ways, the PAT did improve flow as some patients were seen, treated in WR & discharged without the need to go to another dept for treatment. Also, as diagnostics were ordered earlier (ie ultrasound), patients could be assessed by the next ERP & diagnosed, admitted or discharged in a timely fashion. However, on high volume days, it was noted that although patients had all diagnostics completed, they still had lengthy wait times to see the ERP in assigned area for further treatment, admission, or discharge.
10. Shorter times when patients can have x-rays and by the time they see the MT doctor the images are done and mostly reported so the MT doctor can have a care plan right away.
11. Yes, as long as the PAT did not order extensively for patients transferring to other areas. When patients come to streaming, it was helpful to have imaging or PO meds done ahead of time but when they come with IV orders and IV meds that aren't done yet it slows things down for sure as we

now have to assess, initiate and complete those orders prior to the patient waiting to be assessed by streaming physician.

12. It was dependent on the physician who was at triage. The first physician did a full assessment and treatment regimen and did not ask me to complete any tasks. The second physician that I worked with specifically sought me out to complete tasks and discharge multiple patients from triage directly.

5. Would you like to see the Physician at Triage made into a permanent role?



Comments:

1. Triage times per person much longer (longer line, no current ability to track stats as to how long people wait without being triaged) especially with preregistration expectation/double charting, MT patients seen and discharged at front while BCAS patients are not being seen by PIT (not all DR's skip BCAS to be fair). Feels like working at a walk-in clinic--PIT would be more helpful with BCAS patients to improve flow and holding patterns if PIT is necessary but could have a float ERP basically do the same thing just start earlier. Also, the nurse to DO those orders was not always booked leaving triage to pick up the slack of STARTING/COMPLETING orders AS WELL!
2. I can see how this role can benefit the department by decreasing the number of patients that need to visit the emergency room. I know that there was nursing rolls brought in to support this physician at triage however in the event that a patient had been ordered an IV initiation or treatment to be started, it would be good if that nurse could help to initiate those treatments as well.
3. There needs to be more guidelines for physicians, nursing and unit clerks. Problems: 1. when the physician at triage does a complete assessment instead of a focused one. Slowed down the process incredibly with 5 ambulances in line at one time; 2. Unit Clerk wanting to do her photocopying, processing of orders, etc. No paper work should slow down the process of getting a pt into the main!!; 3. Nurses assigned to the "triage Dr" needs clarification of role. If triage is slow and streaming is busting at the seams, nurse should be switching back and forth between departments.
4. Just on long weekends
5. Unsure if it is effective, or would the flow Dr's be able to deal with the same things?
6. Definitely, for a number of reasons. It was interesting and enjoyable to work with the physicians on such a close level. It certainly helped eliminate any confusion/arguments as to where a patient was triaged to. For example, the physician at triage might argue against minor treatment and request a main bed for a patient which, in my experience, had more success than just the triage nurse requesting it. Moreover, it was educational working alongside the physician and making differentials. Finally, and most importantly, I believe this role will decrease time to patients receiving definitive care, and initiating time-sensitive treatments quickly i.e sepsis, asthma, croup.
7. I don't think it's needed
8. It improves patient care, faster time to imaging and medications and provides people with early discharge options. Reduces pain by early removal of spinal precautions, early procedures (reductions, etc.). Improves staff morale, less patient and family complaints

9. I feel that the triage nurses are competent and confident with the triage process and are more in tune with the flow of the department. Revamping the NIBDOS would possibly be more beneficial.
10. Streamline process
11. I think it could be used as a surge position.
12. This would be a "value add" to our department as long as supports (ie PAT nurse coverage) are added in addition to this new role.
13. Yes, but there are some issues with organizing and communication but as a positive it can easily be worked out once the roles are more defined. I feel that many people that came through and just wanted to see if they really needed to see a physician or not appreciated the direct consult and advice from Doctors.
14. Yes!!
15. It made a huge difference in the flow of the department on the long weekend when all the walk-in clinics are closed and the influx of the tourist populations are around

6. Overall, how did this role improve working conditions in the Emergency Department over the trial periods?

1. I enjoyed the deferral of having to do Vital signs on each patient as per ERP at triage 1. Patients seemed happier. Triage 1 is VERY overwhelming with noise level having unit clerk and ERP conversing while trying to triage on top of the already existing registration/volunteers/security/lab/ecg/inreach/RN's/consults/BCAS already walking through triage-- again speaks to confidentiality.
2. It seemed to alleviate some stress off the streaming clerks, and it presented with what seemed to be a faster turnover for patients and exams needed to be done. It definitely helps the flow a more.
3. It made working at triage much more enjoyable and less stressful. Patients were happier due to decreased wait times to see a physician initially and to have orders done promptly. Streaming was busier and at times overwhelming due to orders coming from physician at triage, streaming physician, float physician, ect.
4. Very positive. Sped up the process for patients quite dramatically.
5. Expediting patient care. There does need to be some fine tuning of roles and responsibilities though.
6. I felt having a Unit Clerk at triage seems to be a big benefit to the nurses.
7. Improved conditions across the board for patients and staff.
8. No
9. How did it not?!!!!!!!!!! It is a game changer.
10. The only positive outcome I felt occurred was getting tests (ie. ultrasounds, ct scans) initiated for those patients waiting for streaming/BCAS holding. Other than that, I felt it just added more confusion and work to those nurses already overloaded.
11. Improved
12. It enabled better flow, but significantly increased workload on areas of the dept (triage & streaming) that struggle with keep up with the demands
13. Increased patient satisfaction with early diagnostics and improved patient care as earlier treatments provided.
14. The only benefit is to clear c-spines of low mechanism that are brought in by BCAS collared and boarded. This could be done by Float ERP?
15. Working conditions were stressful due to a new process but I think there is potential to make a great improvement for patient care but there will be an increase of workload and staffing to make it function.
16. I believe that overall the PAT positively impacts patient care and once the kinks are ironed out it will be great!
17. Yes it did!

Crowding in BC Emergency Departments

RECOMMENDATIONS AND ACTION PLAN

Acknowledgements

This report was developed by the between the Emergency Services Advisory Committee (ESAC) with support from the Access and Flow Working Group. Major contributors included:

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Executive Summary

Every year over two million patient visits occur in Emergency Departments (EDs) across British Columbia with volumes, acuity and average patient age increasing every year. Despite the challenges our patients are receiving excellent care.

In the ED where many conditions are time sensitive, timely care is quality care. Delivery of quality care can be impaired by Emergency Department (ED) crowding where the demand for services exceeds the available resources. The most common cause of ED crowding is hospital crowding and is manifested by patients admitted through the ED waiting long periods of time for an inpatient bed. Those with complex chronic conditions, people with moderate, to severe mental illness and/or substance use, the frail elderly, and individuals with dementia or at end of life are disproportionally affected. For these populations, it is important to consider the social determinants of health when developing effective, systematic interventions that reach out into the community.

The issue is important as crowded EDs are at an increased risk for adverse events, delays or missed time-sensitive treatments, missed or delayed transports, and possibly increased death rates. With admission to an inpatient unit being delayed by as little as 6 hours, the mortality rate of the patients can increase (Singer, et al. 2011). Last year in British Columbia (BC), 109,910 patients admitted through the ED and 43% waited more than 6 hours for an inpatient bed.

The issue of ED crowding is widespread throughout Canada and internationally as most jurisdictions have struggled to impact the issue though there are success stories and lessons to be learned.

Solutions to the problem of ED crowding lie across the health care system, within and beyond the walls of our EDs. Recommendations that increase the efficient use of acute care resources and promote better integration with primary care and community resources are central to finding solutions. Resolving ED crowding is possible, but will require vision, commitment, and sustained support from both the Ministry of Health and health authorities.

The Emergency Services Advisory Committee (ESAC) has identified ED crowding as a strategic area of focus. Members of ESAC have reviewed previous work in this area, the scientific literature and BC data to make the following seven recommendations to address the issue.

Recommendations

1. The Ministry of Health and the Standing Committee on Health Services and Population Health make reducing ED crowding a priority issue when making hospital policy, program, and resource decisions.

2. Develop a performance management strategy, supported by data and agreed upon performance targets related to ED crowding and its primary causes.
3. Establish incentives and disincentives linked to ED crowding that act on processes throughout the health system and are not limited solely to the ED.
4. Expand and adapt community services to provide care in the most appropriate location and by the most appropriate care team focusing on primary care services, seniors care, people with complex care needs, and people in need of mental health and substance use services.
5. Implement, evaluate, and report on site and regional initiatives targeting ED crowding.
6. Standardize and adhere to best practices with respect to hospital discharge planning.
7. Adopt process improvement methodologies to increase value and reduce waste when transitioning patients into, through and out of hospitals and the ED.

Introduction

Over time, additional pressures are being put on our emergency departments – in BC and across Canada. We have an aging population, and the number of emergency department visits is growing year after year, and the acuity of those visits is increasing.

One of the most important characteristics of high quality of care in the ED is timeliness and in the vast majority of BC hospitals patients can expect to have an initial assessment, treatment and discharge home within the nationally defined benchmarks. This illustrates that patients are for the most part receiving excellent care. However, when EDs are crowded, quality of care can be affected.

The most commonly used measure of the effect of hospital crowding on the ED is the time waiting for an inpatient bed for those patients admitted through the ED. In a report by the Canadian Institute for Health Improvement based on 11.2 million ED visits across the country it was found that ED length of stay for people admitted to hospital in 2016‑2017 was up 11% from the year before and almost 17% from 5 years ago. Despite the worsening nature of this problem, most jurisdictions struggle to find effective solutions.

However, solutions do exist and the literature base in quality improvement consistently refer to the importance of executive leadership's engagement, support, and commitment to improving ED crowding with physician and administrative leadership as both being absolutely critical. Given ED crowding is often a symptom rather than the root cause, leadership buy-in from those with overarching responsibilities is vital.

Background of This Report

This is not a new issue. Two reports were produced in BC in 2009; the first entitled "Improving Access to Emergency Department Care: Emergency Department Overcrowding Solutions Framework" produced by the BC Medical Association, BC Section of Emergency Medicine and the Ministry of Health and a second entitled "Improving Access to Quality Care for Emergency Department Patients in British Columbia" was submitted by the ED Decongestion Expert Panel (Appendix B). Both reports were reviewed and used to inform this report. Recommendations from the 2009 report were partially adopted, but the there is still work to be done.

To develop and support the recommendations in this report, a literature review on the impacts of ED crowding and ED crowding interventions was completed (Appendix D) and reports on ED crowding by the Advisory Board were reviewed.

Emergency Department data was analyzed to determine where areas of concern are in BC EDs, and appropriate interventions are provided here as recommendations. This data can be found throughout the report and in Appendix C.

This report and recommendations were developed by the Emergency Services Advisory Committee and the Access and Flow Committee at the request of the Standing Committee on Health Services and Population Health to plot a course of action for addressing the issue of ED crowding in BC.

Causes of ED Crowding

ED crowding is a complex problem that spans beyond the borders of BC; it has been identified as a persistent issue for many hospitals across Canada and internationally. ED crowding has been defined by the American College of Emergency Physicians as "a situation in which the identified need for emergency services outstrips the available resources in the ED" (Schneider, et al. 2003). There are many potential causes of ED crowding. However, according to the Canadian Association of Emergency Physicians, the principle cause is hospital crowding which is likely true in BC. When this occurs, admitted patients occupy ED stretchers and there is no room for incoming emergency patients.

Crowding can result in patients waiting for treatment in non-treatment areas (e.g., hallways) or waiting long periods of time with paramedics or in waiting rooms. Contrary to popular belief, misappropriate use of the ED is not the primary cause of ED crowding; rather, it is imbalances across the system that result in greater intake than the ED can handle (Affleck, et al. 2003).

For an ED to operate efficiently and effectively there must be a relative state of equilibrium between the number of patients exiting and entering the ED. Disruptions to this balance can create bottlenecks in the system that raise the level of crowding. For example, if hospital inpatient length of stay increases due to a lack of services in the community or insufficient post-acute care capacity, then hospital occupancy rises, and newly admitted patients remain in the ED while they await an inpatient bed. The result of this situation is that the functional capacity of the ED shrinks (these newly admitted patients now occupy ED stretchers), and the ED now has to care for any incoming and existing patients in a much smaller footprint, which results in crowding. The primary reason this equilibrium is disrupted is an increase in hospital crowding due to high occupancy levels.

Other significant contributors include inefficient processes in transitioning patients from the ED, through the hospital and back to the community. Applying knowledge about social determinants of health and developing effective, systematic interventions that reach out into the community should be an important consideration for these populations.

Impacts of ED Crowding

The impact of ED crowding on the health of patients is significant, the most notable impact being a potential increase in patient mortality which has been observed in several studies (Carter et al., 2013). Singer et al. found that mortality begins to rise at waits of 6 hours and can result in potential increases of mortality by 1% (Figure 1).

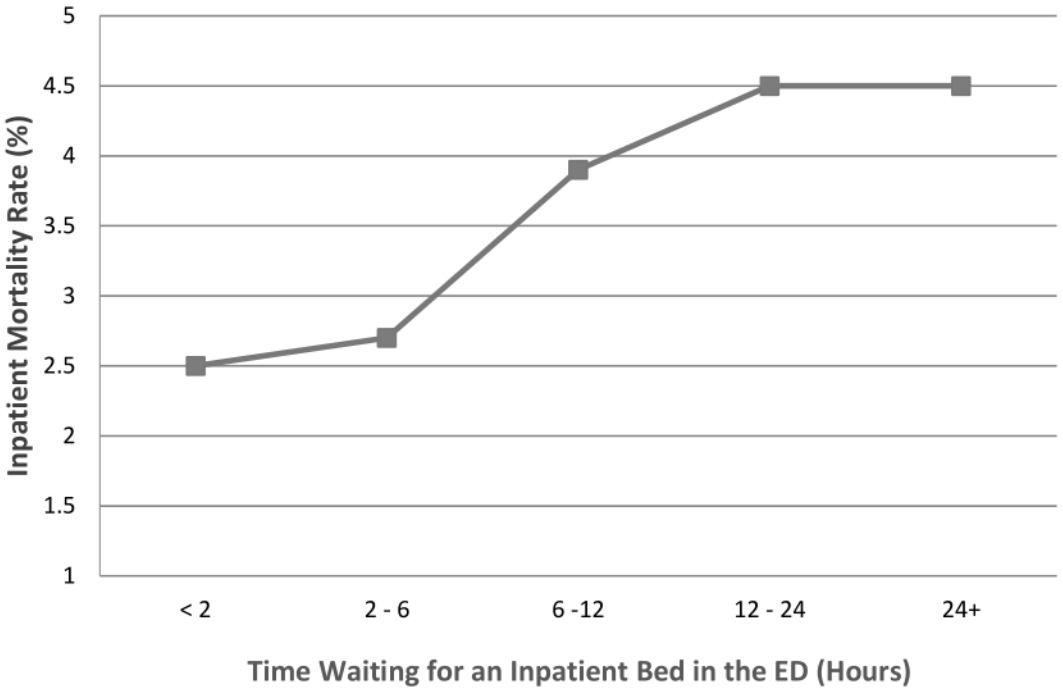


Figure 1: Inpatient mortality rates increase as patients wait longer to be transferred to an inpatient bed from the emergency department. Singer et al (2011) demonstrated an increase in patient mortality from 2.5%, when wait time for an inpatient bed was less than two hours, to 4.5%, when wait time for an inpatient bed was greater than 12 hours.

Other effects of ED crowding may not be as dramatic but are still worth noting. Patient satisfaction is commonly found to be affected, and is associated with longer ED length of stay, higher rates of patients leaving without being seen, and longer waits for assessment and treatment (Pines and McCarthy, 2011; Arya et al., 2013; Santos et al, 2016; Sayah et al., 2016). Clinical outcomes may also be affected by ED crowding, including delays to resuscitation for critically ill patients (Hong et al., 2013), delivery of antibiotics in sepsis patients (Gaieski et al., 2017), coronary interventions for cardiac patients (Filippatos and Evridike, 2015), and medications for asthma patients (Sills et al., 2013). During times of ED crowding, patients discharged from the ED may be at an increased risk of adverse events (Guttman et al., 2011).

Experience of ED Crowding

"On one occasion I was feeling unwell and so called an ambulance. I was taken to the nearest emergency department where I was placed in a wheelchair in the waiting room. I waited for several hours before being taken in and was moved between several chairs in the emergency department while I was examined and treated by the emergency staff. The staff seemed to be run off their feet. I was surprised by my experience and my eyes were opened to how crowded the emergency department was."

s.22 *emergency patient, Lower Mainland BC*

"Emergency overcrowding is the biggest issue I face in the emergency department. Inefficiencies and the risk of error increases exponentially as we become more overcrowded and I am not able to provide the high-quality care to my patients. Most frustrating is the feeling of helplessness we have as emergency staff knowing that the most important solutions are beyond our control."

~ Dr. Peter Macdonald, Emergency Physician, Royal Columbian Hospital

"If we were able to rapidly move people who need hospital admission from the ED into a hospital bed, we would have more than enough capacity to deal with incoming emergencies efficiently and effectively with virtually no waiting room care. "

~ Dr. Jim Christenson, Head, Department of Emergency Medicine, University of British Columbia Faculty of Medicine

The BC Context

In BC, between 2012/13 and 2016/17 ED visits have increased from just over two million to just over 2.3 million per year. Compounding this increase is the concomitant increase in acuity of patients presenting to EDs with a relatively higher number of high acuity patients (CTAS 1-3) presenting while the proportion of low acuity (CTAS 4-5) decreasing (Figure 2).

Changes in ED Visit Volume and Acuity at Selected Emergency Department Sites

(April 2010 – Sept 2016)

	Overall Increase	Annual Increase	Change in CTAS 1-2	Change in CTAS 3	Change in CTAS 4-5
Victoria General	27%	4.9%	0%	3%	-3%
Royal Jubilee	26%	4.7%	3%	0%	3%
Nanaimo Regional	14%	2.5%	8%	4%	-13%
Royal Columbian	17%	3.1%	6%	6%	-12%

Eagle Ridge	14%	2.5%	3%	4%	-2%
Cowichan District	6%	1.0%	1%	-1%	-1%
Delta	10%	1.8%	3%	4%	-1%
Royal Inland	27%	5.0%	-2%	1%	5%
Richmond General	24%	4.4%	3%	4%	-6%
Lions Gate	22%	4.1%	3%	0%	-2%
St. Paul's	23%	4.1%	3%	8%	-11%
Vancouver General	20%	3.7%	1%	1%	-3%
Mount St. Joseph	41%	7.5%	2%	20%	-22%
All Sites	**21%**	**3.7%**	**3%**	**4%**	**-5%**

Figure 2: Changes in ED volumes and acuity between 2010 and 2016. There has been an increase in volumes at all sites and an increase in the proportion of high acuity (CTAS 1-3) patients and a drop in the proportion of low acuity (CTAS 4-5) patients.

Although it's a tempting thought, the solution to ED crowding in BC does not lay in building larger EDs. This is not the case, and studies have shown that expansion of the ED footprint can actually make crowding worse (Mumma, 2014). If there were only emergency patients being treated in the EDs, and admitted patients were only found on inpatient units, BC emergency departments would have the capacity and infrastructure to function efficiently. Adding more ED beds will not predictably improve the issue of crowding; what is required is a system-wide improvement in patient flow throughout the ED and the hospital.

Regarding low acuity visits, the majority of EDs in BC are meeting targets for the assessment and treatment of patients who are discharged (figure 3). This holds true even in larger hospitals that struggle with congestion issues. For these reasons it could be argued that low acuity visits are not the primary driver for ED congestion. Data for smaller hospitals and low acuity patients is similar and can be found in Appendix C. Unfortunately, the same cannot be said for those patients admitted to the hospital through the ED.

(Figure 3)

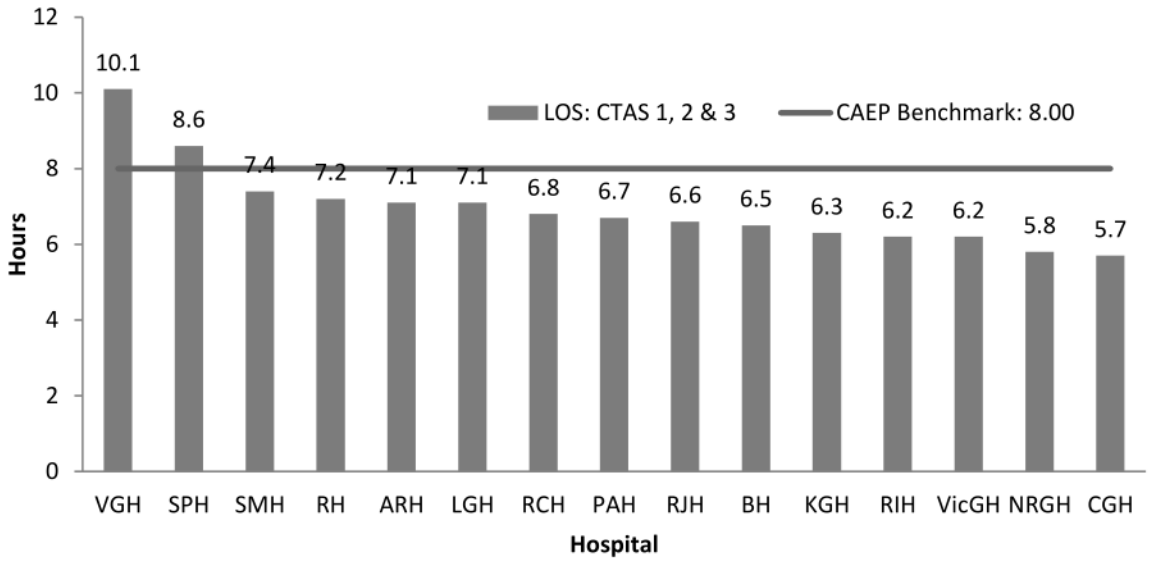


Figure 3: 90th percentile Emergency Department Length of Stay (LOS) in hours for patients with high acuity treated and discharged from the ED in larger hospitals. Benchmark of the Canadian Association of Emergency Physicians (CAEP) is shown.

The most commonly used measure of the effect of hospital crowding on the ED is the time waiting for an inpatient bed for those patients admitted through the ED. The measure has remained unchanged in BC since 2010 with the percentage of admitted patients receiving an inpatient bed within the benchmark being 66% in 2010/11 and 65% in 2016/17. None of BCs larger hospitals are achieving the benchmark of 8 hours for time to wait for an inpatient bed.

(Figure 4).

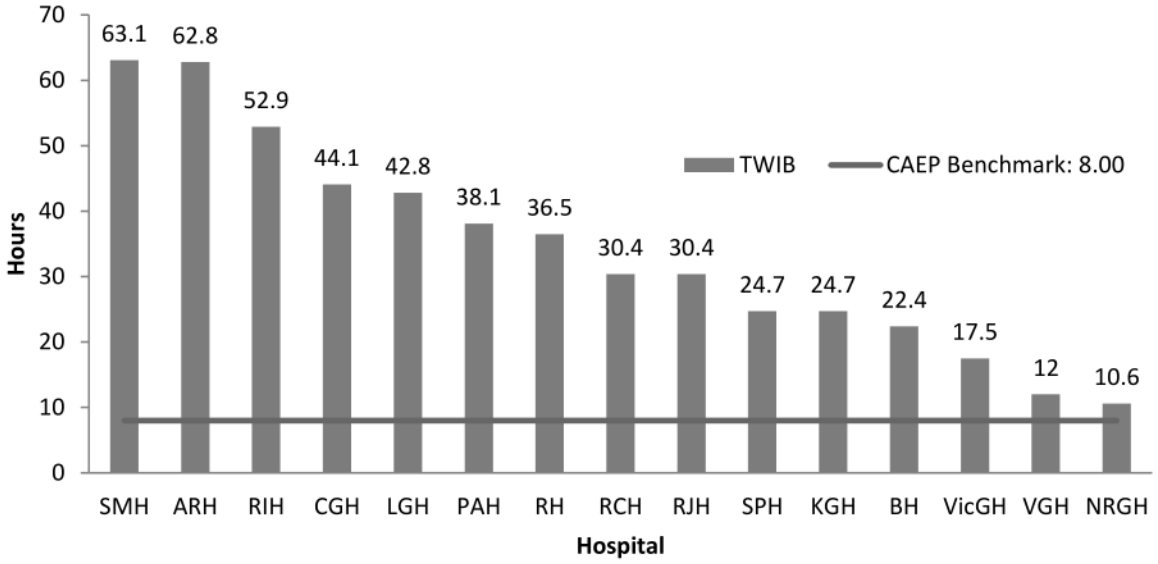


Figure 4: Time waiting for an inpatient bed (TWIB) in the emergency department after admission in hours for patients in larger hospitals. Benchmark of the Canadian Association of Emergency Physicians (CAEP) is shown.

In BC in 2016/17, there were 109,910 patients admitted through the ED who waited greater than 6 hours for an inpatient bed; this is 43% of all admitted patients. As discussed previously, Singer et al. found an increase in mortality of 1% with delays greater than 6 hours. In addition to this, admitted patients spending time in the emergency department may be at an increased risk of delirium, hospital acquired infections, falls and other adverse events.

As ED crowding is directly impacted by hospital crowding, it is no surprise that those hospitals with an occupancy greater than 100% also show the longest delays in transferring patients to an inpatient unit.

(Figure 5)

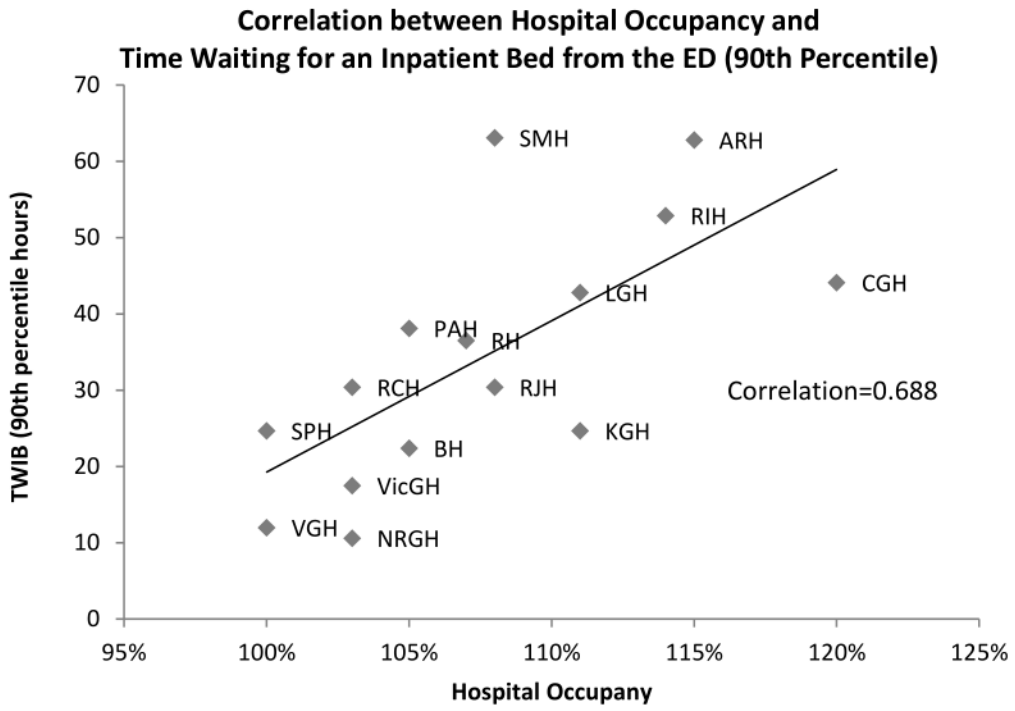


Figure 5: Correlation between time waiting for in inpatient bed in the ED and hospital occupancy for hospitals in BC.

Recommendations

ED crowding is both a symptom of systemic issues as well as an opportunity for improvements. As such, ED crowding can be, or ought to be, addressed with a multi-faceted approach including pre-hospital and community care, EDs and the hospitals they sit within, post-hospital services, and accountability structures. The Emergency Services Advisory Committee (ESAC) and Access and Flow Committee recommend the following 7 actions:

Accountability

1. *Ministry of Health and the Standing Committee on Health Services and Population Health, make reducing ED crowding a priority issue when making hospital policy, program, and resource decisions.*

Background

- Systems that have shown success at reducing ED crowding such as the National Health Service in the United Kingdom, and the Australian Health System, all share in common

the support and commitment at the highest levels of government and within the health system.
- Resolving ED crowding requires effort across the whole patient pathway and cannot be solved by interventions solely within the ED.

Actions

- The Ministry of Health and the Standing Committee on Health Services and Population Health will endorse ED crowding as an upcoming priority.

2. *Develop a performance management strategy, supported by data and agreed upon performance targets related to ED crowding and its primary causes.*

Background

- The National Ambulatory Care Registry System (NACRS) collects data from across the country regarding metrics surrounding emergency department access and flow. Some, but not all, sites in BC currently submit data to NACRS.
- Performance measurement and reporting is well documented to drive quality improvements in the health sector. By linking performance measures with a standardized reporting template, health organizations and systems can provide comprehensive reporting on outcomes, activities, and system inputs to better understand if the system is moving towards achieving its goals.
- Many ED experts agree the optimal occupancy levels are 85% of total hospital capacity, however there is evidence that hospitals of various sizes differ in their ability to respond to capacity thresholds. Modern hospital systems have been found to operate efficiently above the often-prescribed 85% occupancy level, with optimal levels varying across hospitals of different size. Similarly, EDs can function effectively at low levels of crowding but become dysfunctional at higher occupancy levels. Optimal occupancy levels need to be calculated specifically for each hospital service.
- Performance targets have already been established by national organizations and include, time to physician initial assessment, emergency department length of stay, number of admitted patients in the ED, ED length of stay for admitted and discharged patients, and hospital occupancy.

Actions

- Explore opportunities to expand the collection of NACRS data to additional sites within the province.
- Undertake modeling to understand the relationship between ED and hospital crowding and to establish evidence based provincial and site-based performance targets.

- Develop performance targets by forming a working group consisting of ESAC members, Ministry of Health, and Access and Flow Committee representatives.
- Stakeholders with Action Items on the work plan will report progress quarterly to ESAC and to the Standing Committee on Health Services and Population Health.

3. *Establish incentives and disincentives linked to ED crowding that act on processes throughout the health system and are not limited solely to the ED.*

Background

- Incentives combined with defined targets have been shown to improve ED crowding.
- Care must be taken *a priori* to understand the potential effects of incentives and disincentives to ensure they do not adversely affect the system in unplanned or harmful ways.

Actions

- Health authorities will develop and implement incentives and disincentives directed towards reducing ED crowding.

Community Health Services

4. *Expand and adapt community services to provide care in the most appropriate location and by the most appropriate care team focusing on primary care services, seniors care, people with complex care needs, and people in need of mental health and substance use services.*

Background

- Efforts to divert CTAS 4 and CTAS 5 patients away from EDs have been largely unsuccessful. With the increase in patients with complex care needs, including the frail elderly and patients with mental health and substance use issues presenting to EDs and subsequently being admitted there is an urgent need to adapt. By strengthening connections to appropriate services in the community and better managing the needs of these patient populations, admissions to the hospital can be prevented. When these populations have access to appropriate services within their communities, with care providers who consider the social determinants of health, there is often no need for them to present at an ED.
- By reducing demands on the acute care system through reduced numbers of admissions, hospital crowding will also be reduced.

Actions

- ESAC will support, however required and appropriate, ongoing strategic work focused on improving coordination of care between primary and community care.
- ESAC and Access and Flow will develop a relationship with primary care to establish target areas for improvement, protocols for improving coordination of care and performance measures to identify progress.
- ESAC will advocate for further implementation of services in the community and leveraging of new or existing resources with the aim of reducing emergency department visits and subsequent admission to hospital.

Emergency Departments

5. *Implement, evaluate, and report on site and regional initiatives targeting ED crowding.*

Background

- No two EDs are exactly the same, nor are the reasons they become crowded. What is the same are the organizational and system issues that need on-the-ground, champion-led solutions to address site level issues in alignment with those organizational and system accountabilities.
- Many EDs within BC have adopted strategies locally to reduce ED crowding by acting in their ED, hospital and community.

Actions

- ESAC will prioritize ED crowding by establishing the regular dissemination of local solutions through ESAC and the BC Emergency Medicine Network.
- Improve patient flow through the ED by focusing on process issues such as patient segmentation and streaming, use of provider in triage, admission and discharge best practices, and nurse initiated orders within all EDs. All EDs will implement process and quality improvements using methodologies such as Lean and frameworks such as the Institute for Healthcare Improvement's Triple Aim, to improve not only the quality of care, but also patient and provider satisfaction, in a cost-effective manner.

Hospitals

6. *Standardize and adhere to best practices with respect to hospital admission and discharge planning.*

Background

- Admission and discharge protocols vary greatly between and within jurisdictions and variation significantly affects performance of a hospital.
- Best practice admission and discharge protocols include establishing an estimated date of discharge on admission, early mobility, conditional discharge instructions, clear communication of the plan with patients and family regarding anticipated discharge dates and early involvement of allied health professionals such as occupational therapists, physiotherapists, and social workers.
- Research points to best practice admission and discharge protocols reducing hospital, and therefore, ED crowding by improving patient flow through the hospital.

Actions

- The Access and Flow Committee will work to standardize and provide best practice protocols for hospital admission and discharge planning.
- Health Authorities will adopt appropriate and relevant best practice admission and discharge protocols at all acute care sites.

7. *Adopt process improvement methodologies to increase value and reduce waste when transitioning patients into, through and out of hospitals and the ED.*

Background

- Improving processes into, through and out of the ED, including into the hospital and back to the community has been shown to improve ED flow. Process improvement methodologies such as Lean interventions have been shown to improve patient discharge times and are commonly utilized by high performing hospitals.
- A focus on this area will positively impact all areas of the health system, including primary care, pre-hospital care, EDs, acute care, and long-term care.

Actions

- Each hospital should establish a quality improvement strategy, which will focus on transitioning patients from the ED on to acute units, and ultimately back to the community.

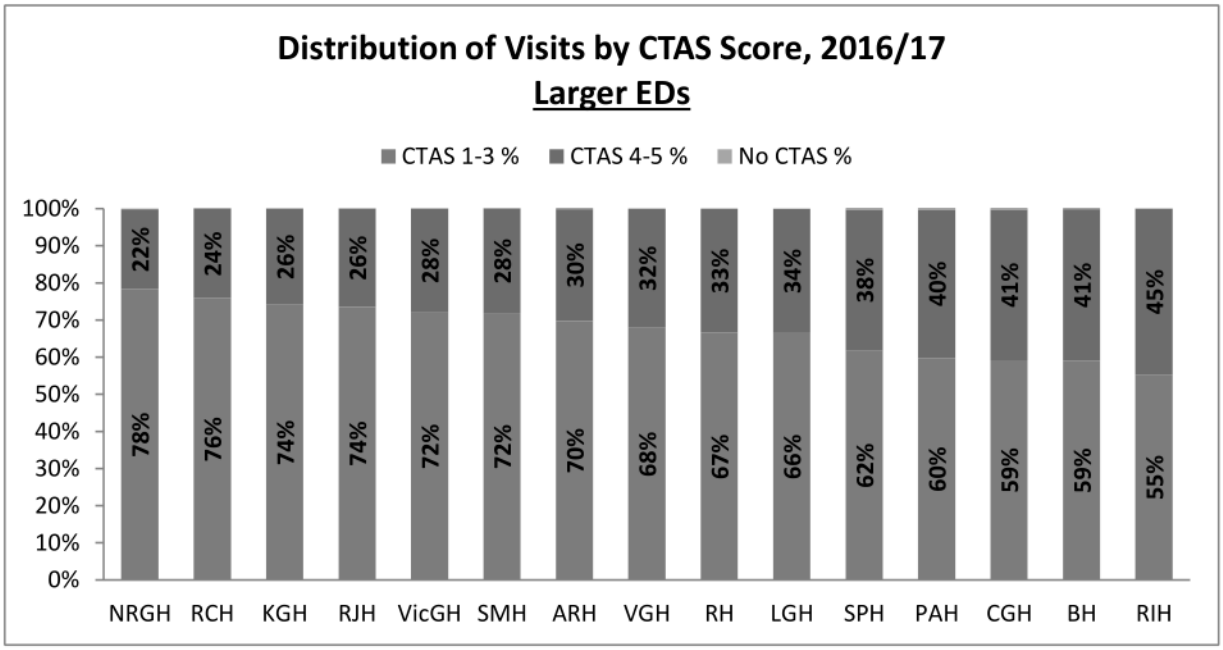
Appendix A – Abbreviations

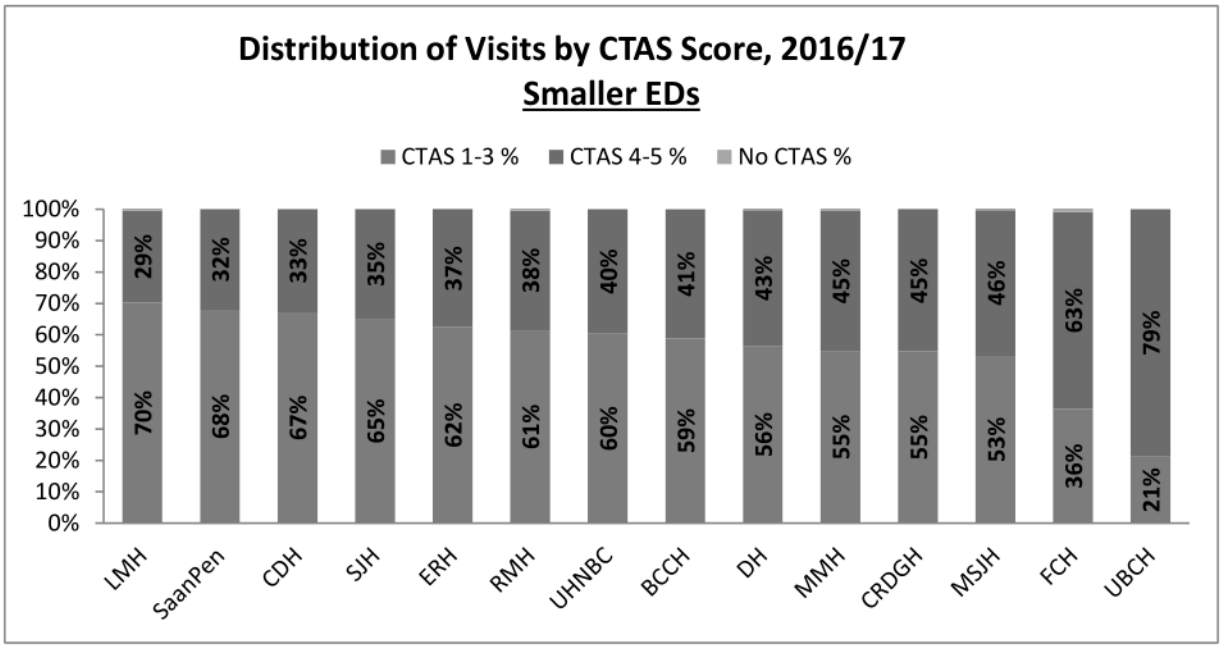
BC - British Columbia
CAEP - Canadian Association of Emergency Physicians
CDH – Cowichan District Hospital
DH – Delta Hospital
ED - Emergency Department
ERH – Eagle Ridge Hospital
ESAC - Emergency Services Advisory Committee
KGH – Kelowna General Hospital
LGH – Lion's Gate Hospital
LOS - Length of Stay
LWBS - Leave without Being Seen
MSJH – Mount St. Joseph Hospital
NACRS - National Ambulatory Care Reporting System
NRGH – Nanaimo Regional General Hospital
RCH – Royal Columbian Hospital
RJH - Royal Jubilee Hospital
RIH – Royal Inland Hospital
RGH – Richmond General Hospital
SPH – St. Paul's Hospital
TWIB - Time waiting for an inpatient bed
VGH – Victoria General Hospital
VGH – Vancouver General Hospital

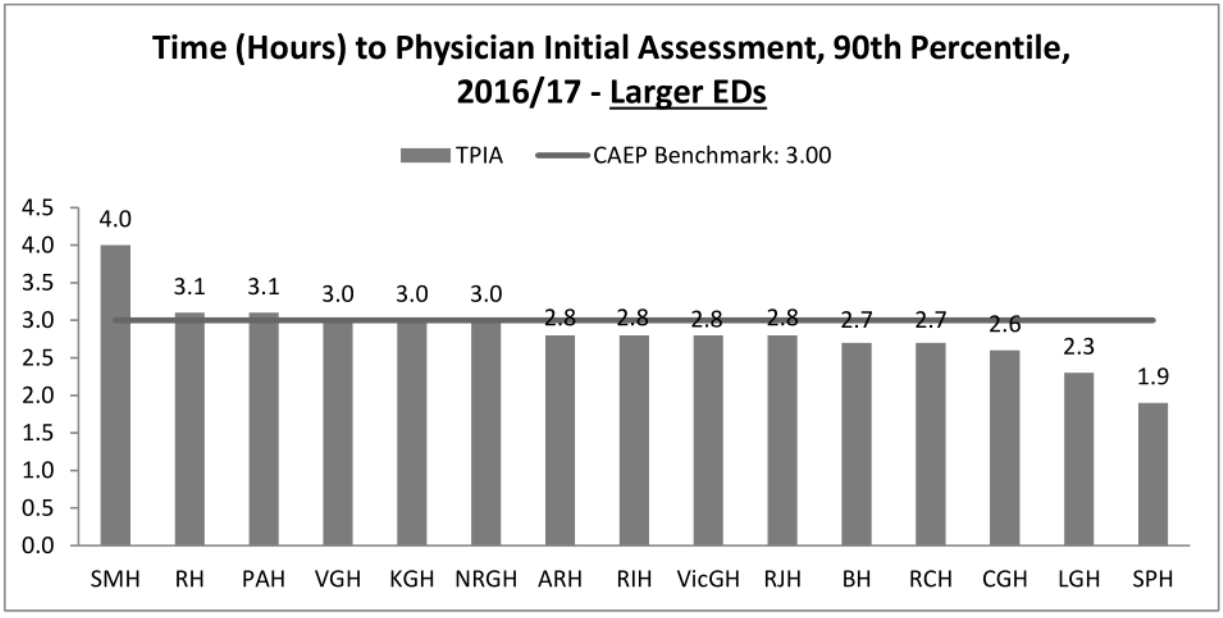
Appendix B – 2009 ED Crowding Reports

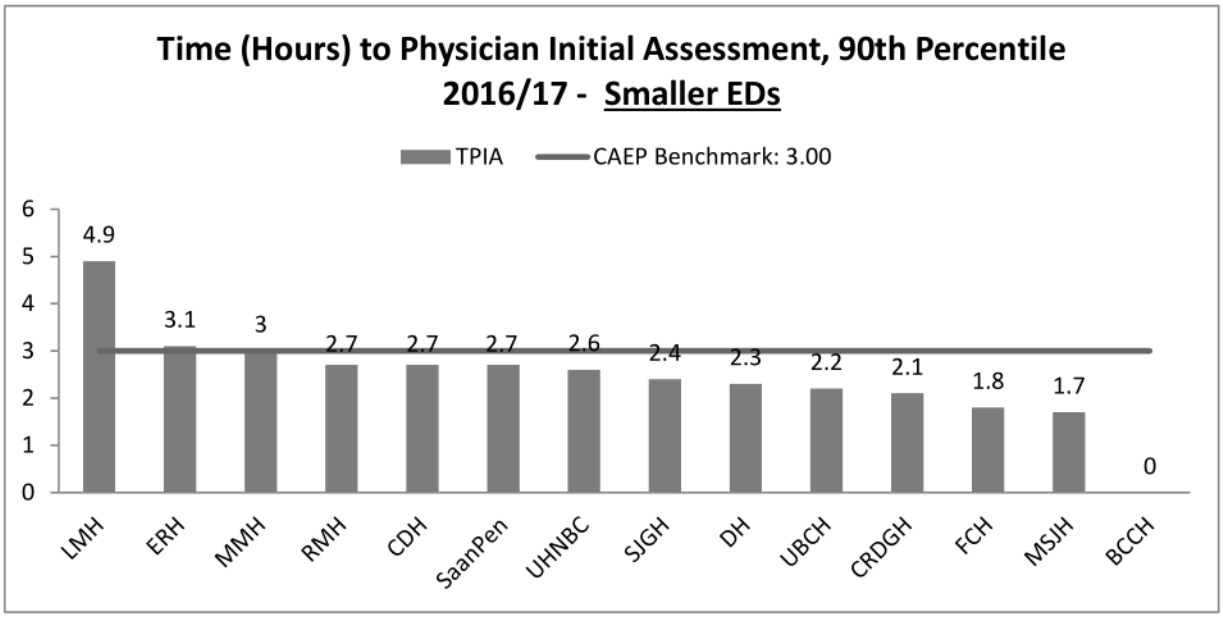
"Improving Access to Emergency Department Care: Emergency Department Overcrowding Solutions Framework" produced by the BC Medical Association, BC Section of Emergency Medicine and the Ministry of Health and a second entitled "Improving Access to Quality Care for Emergency Department Patients in British Columbia" was submitted by the ED Decongestion Expert Panel

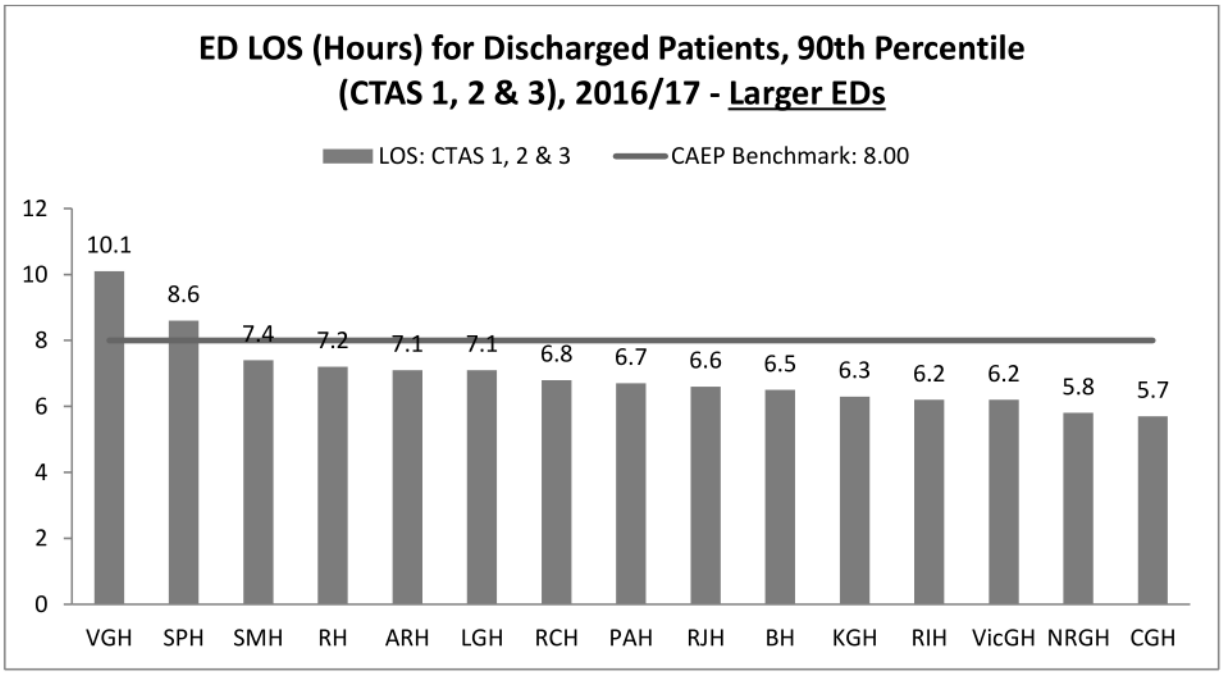
Appendix C – Supporting Data

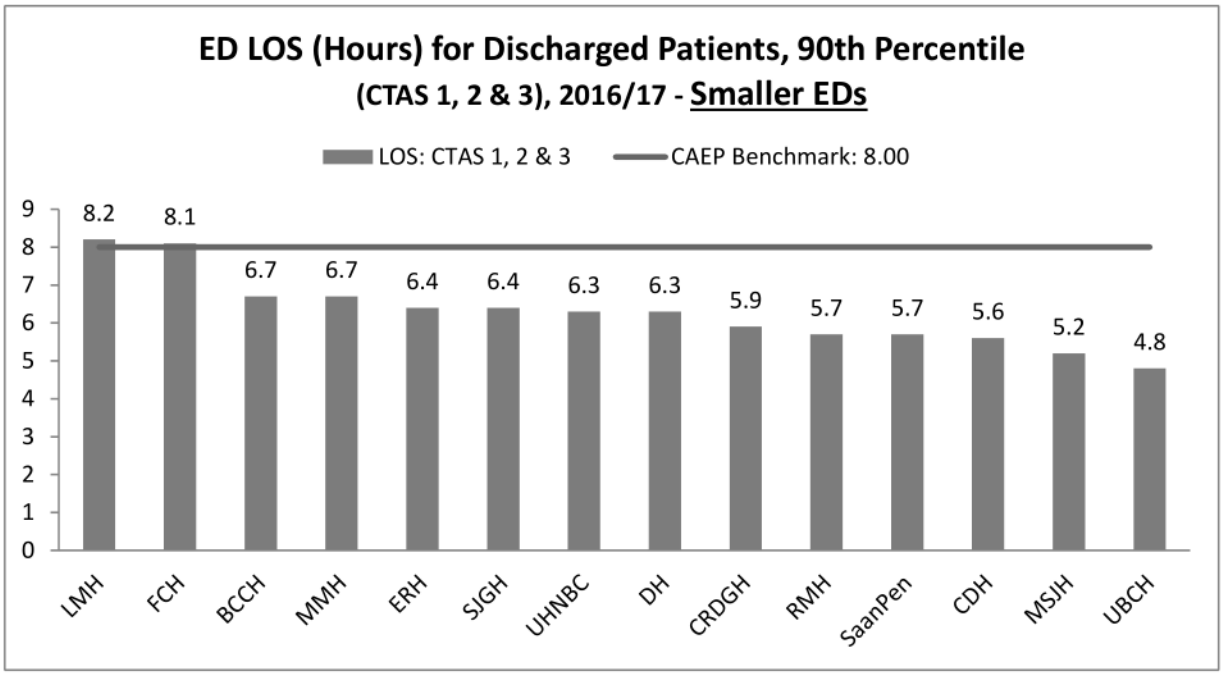


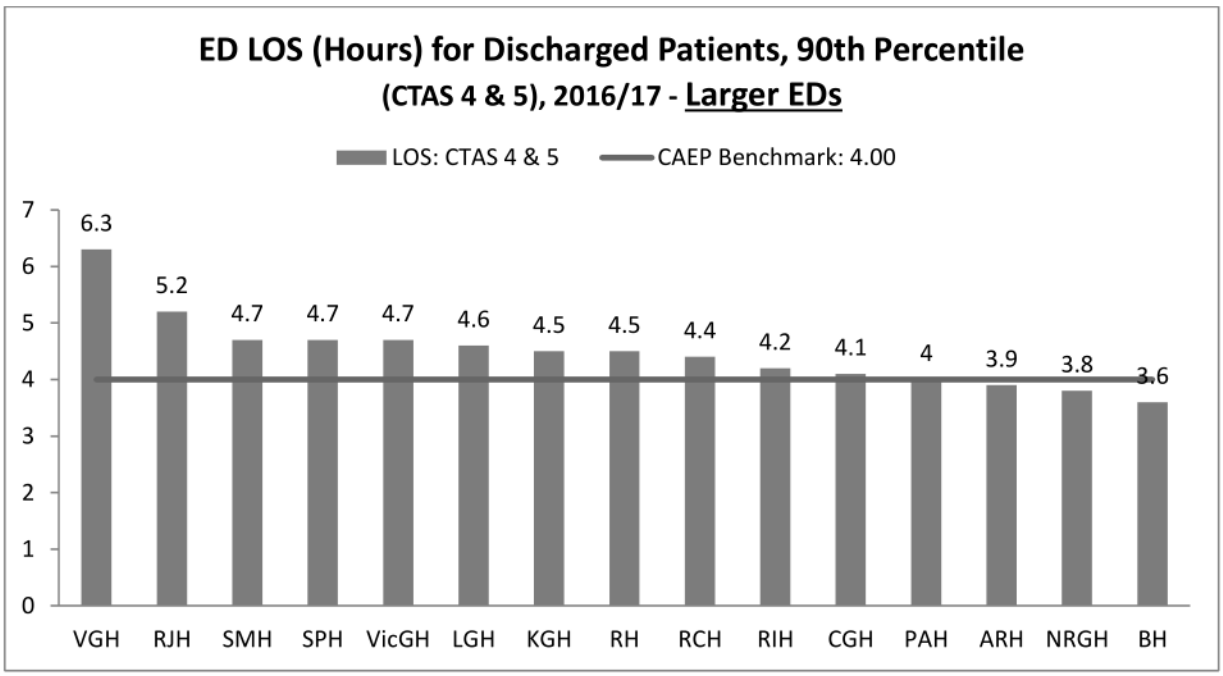

Distribution of Visits by CTAS Score, 2016/17
Smaller EDs
CTAS 1-3 %
CTAS 4-5 %
No CTAS %
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
LMH 29% 70%
SaanPen 32% 68%
CDH 33% 67%
SJH 35% 65%
ERH 37% 62%
RMH 38% 61%
UHNBC 40% 60%
BCCH 41% 59%
DH 43% 56%
MMH 45% 55%
CRDGH 45% 55%
MSJH 46% 53%
FCH 63% 36%
UBCH 79% 21%


Time (Hours) to Physician Initial Assessment, 90th Percentile,
2016/17 - Larger EDs
TPIA
CAEP Benchmark: 3.00
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
SMH 4.0
RH 3.1
PAH 3.1
VGH 3.0
KGH 3.0
NRGH 3.0
ARH 2.8
RIH 2.8
VicGH 2.8
RJH 2.8
BH 2.7
RCH 2.7
CGH 2.6
LGH 2.3
SPH 1.9






ED LOS (Hours) for Discharged Patients, 90th Percentile
(CTAS 1, 2 & 3), 2016/17 - Smaller EDs
LOS: CTAS 1, 2 & 3
CAEP Benchmark: 8.00
9
8
7
6
5
4
3
2
1
0
8.2
8.1
6.7
6.7
6.4
6.4
6.3
6.3
5.9
5.7
5.7
5.6
5.2
4.8
LMH
FCH
BCCH
MMH
ERH
SJGH
UHNBC
DH
CRDGH
RMH
SaanPen
CDH
MSJH
UBCH


ED LOS (Hours) for Discharged Patients, 90th Percentile
(CTAS 4 & 5), 2016/17 - Larger EDs
LOS: CTAS 4 & 5
CAEP Benchmark: 4.00
7
6
5
4
3
2
1
0
6.3
5.2
4.7
4.7
4.7
4.6
4.5
4.5
4.4
4.2
4.1
4
3.9
3.8
3.6
VGH
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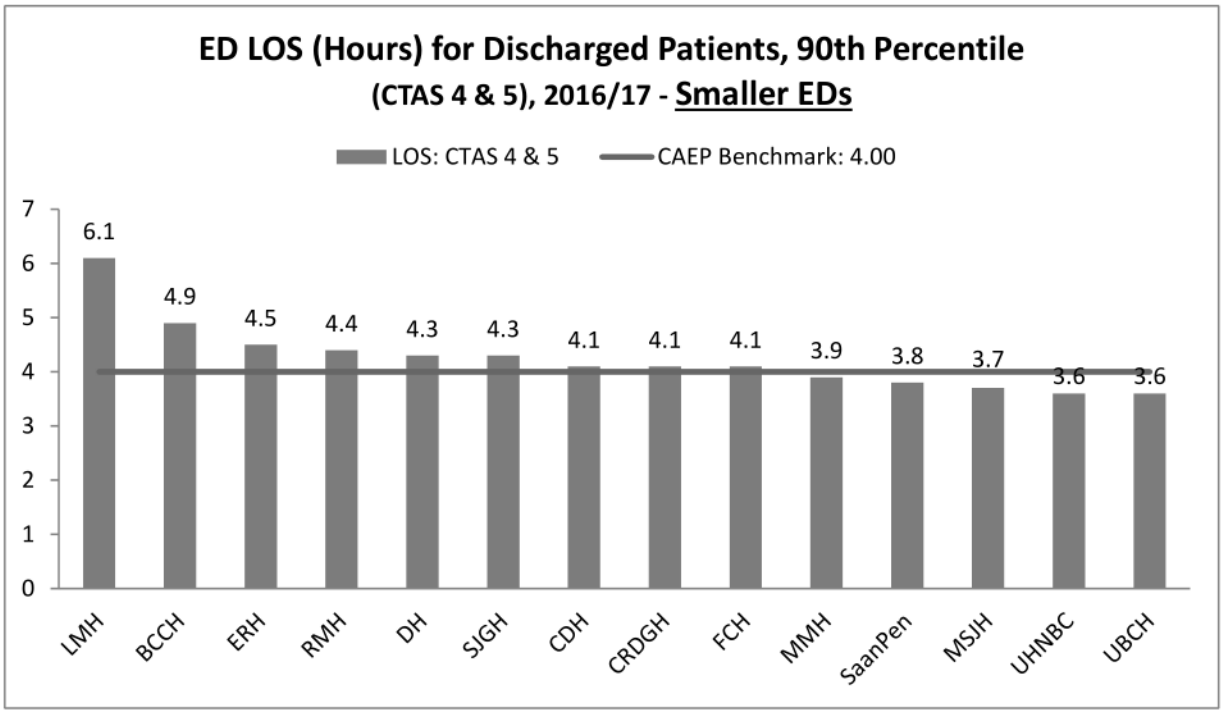
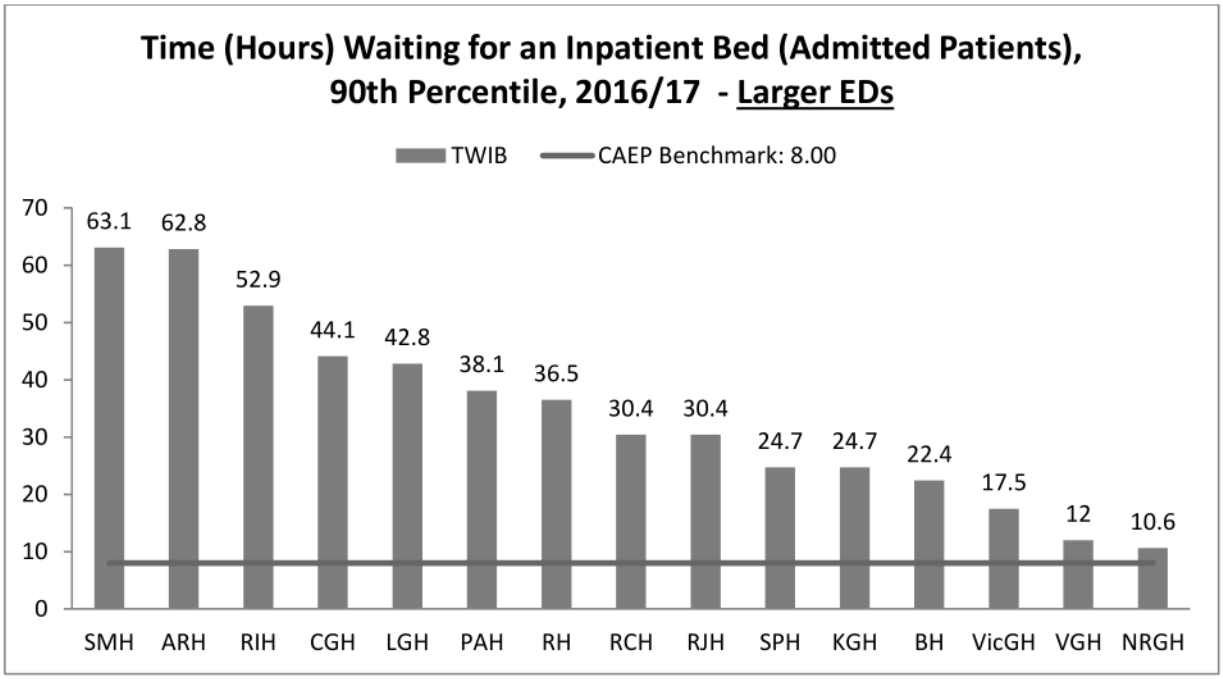
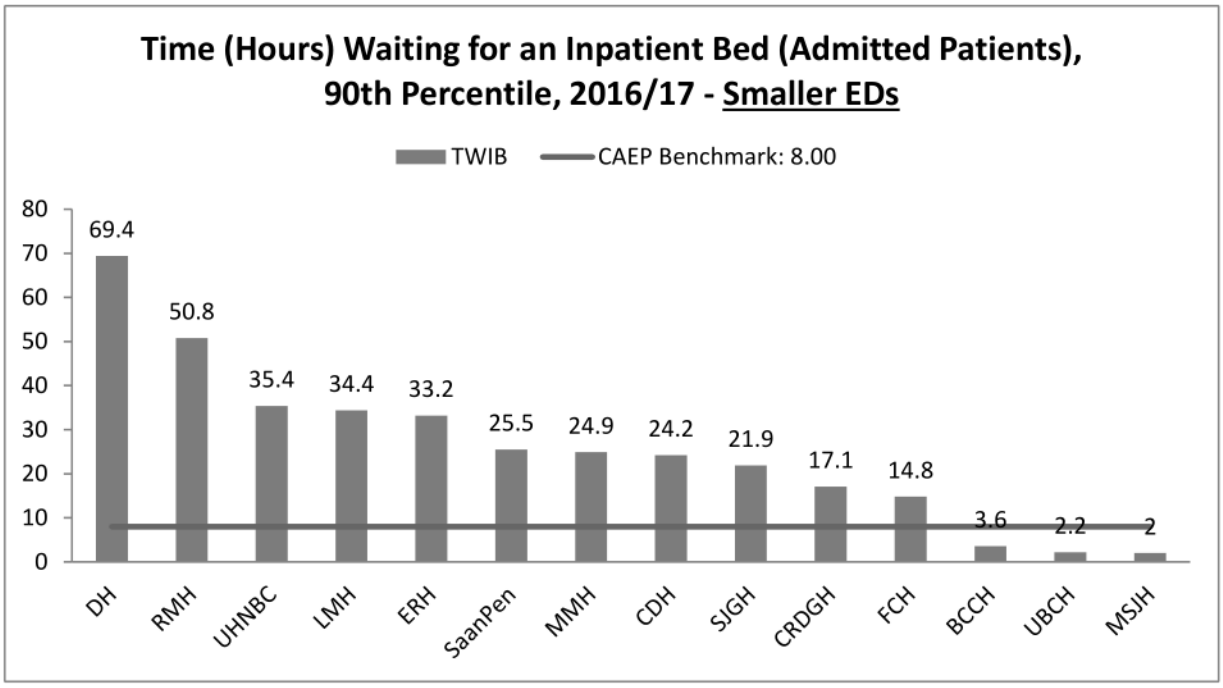
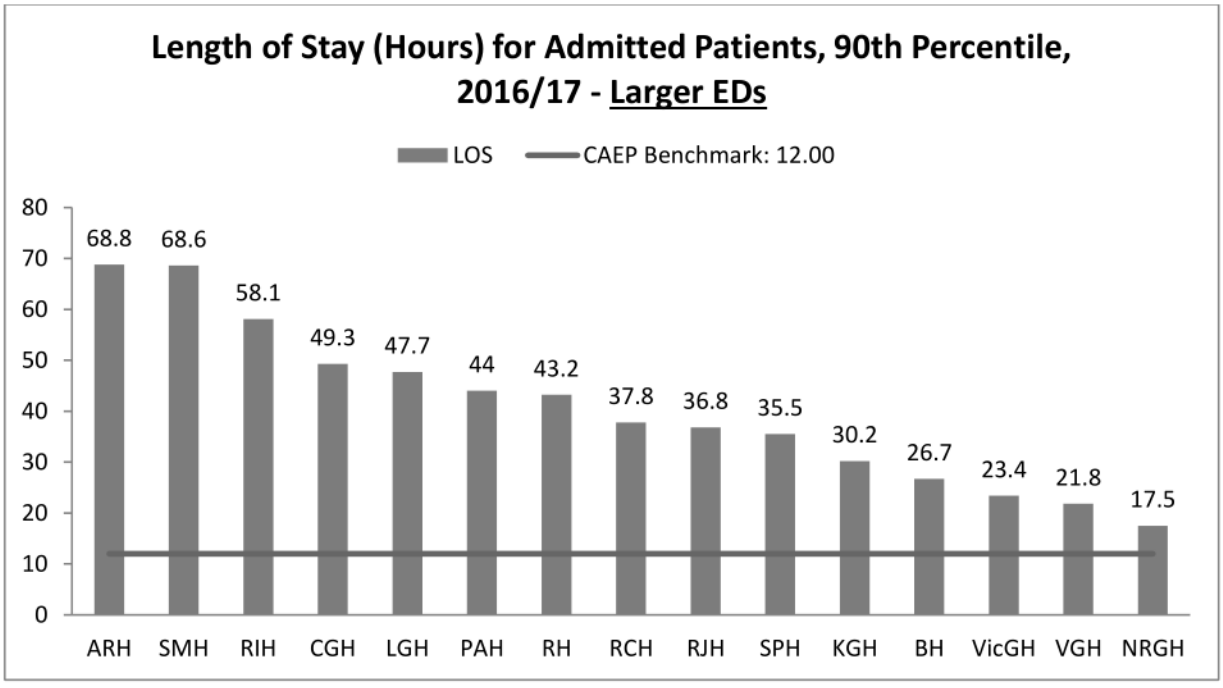
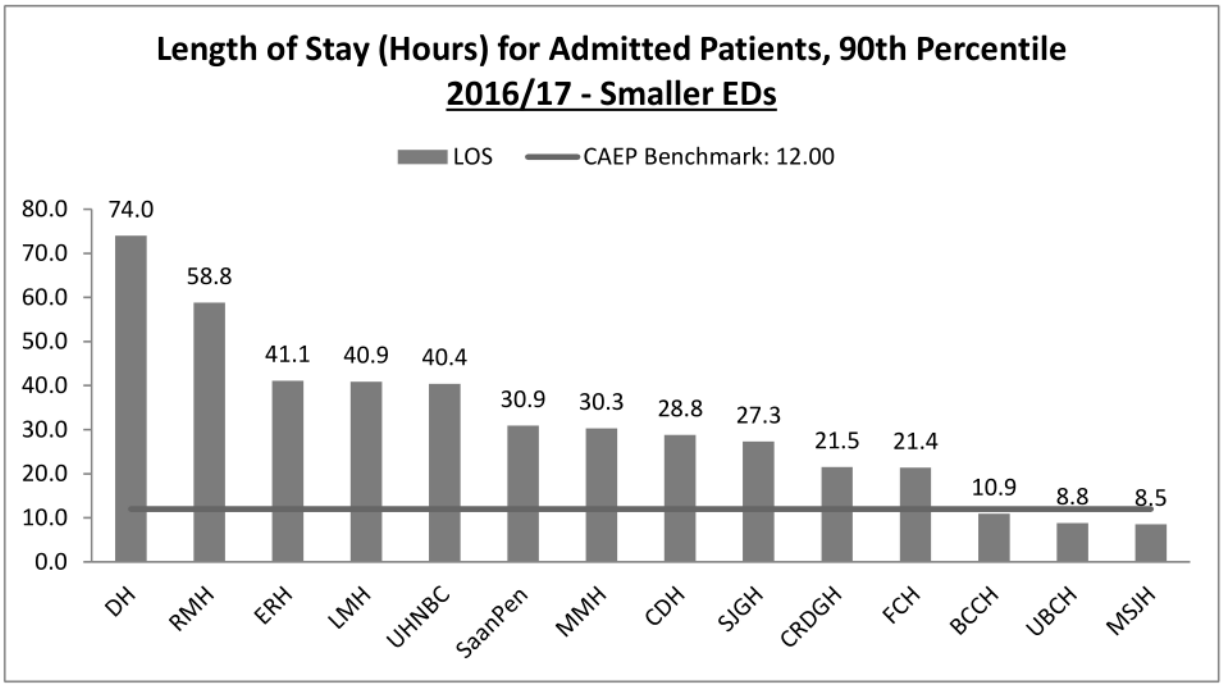
CGH
PAH
ARH
NRGH
BH

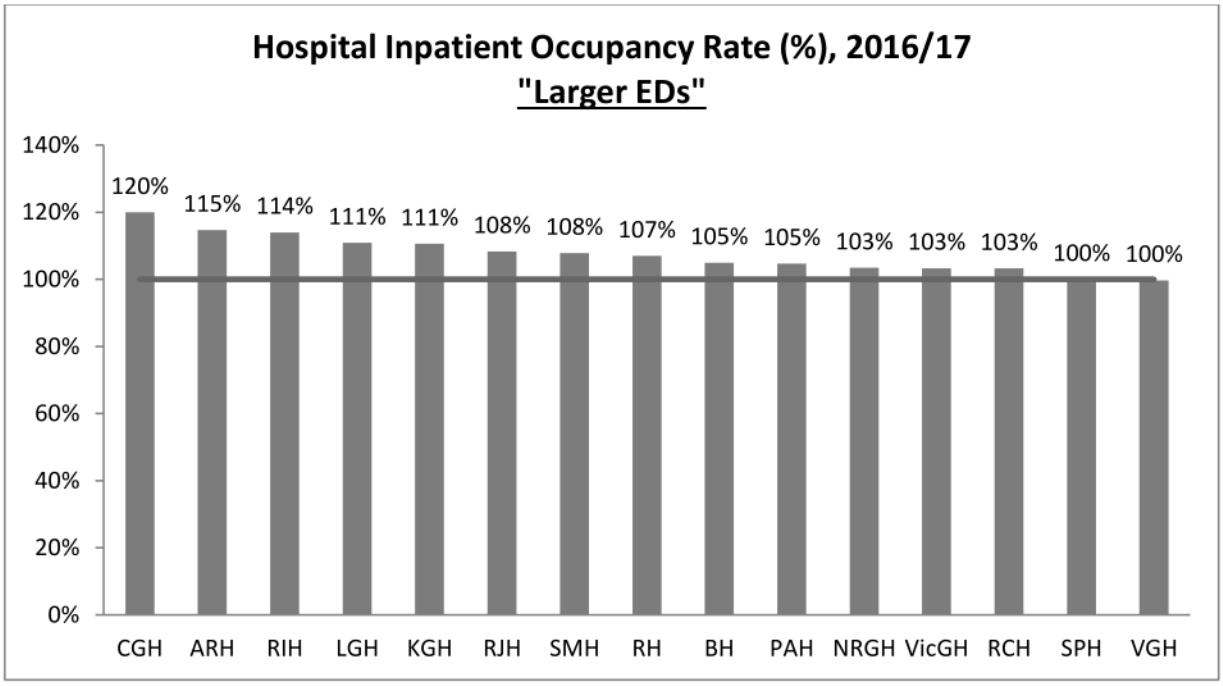


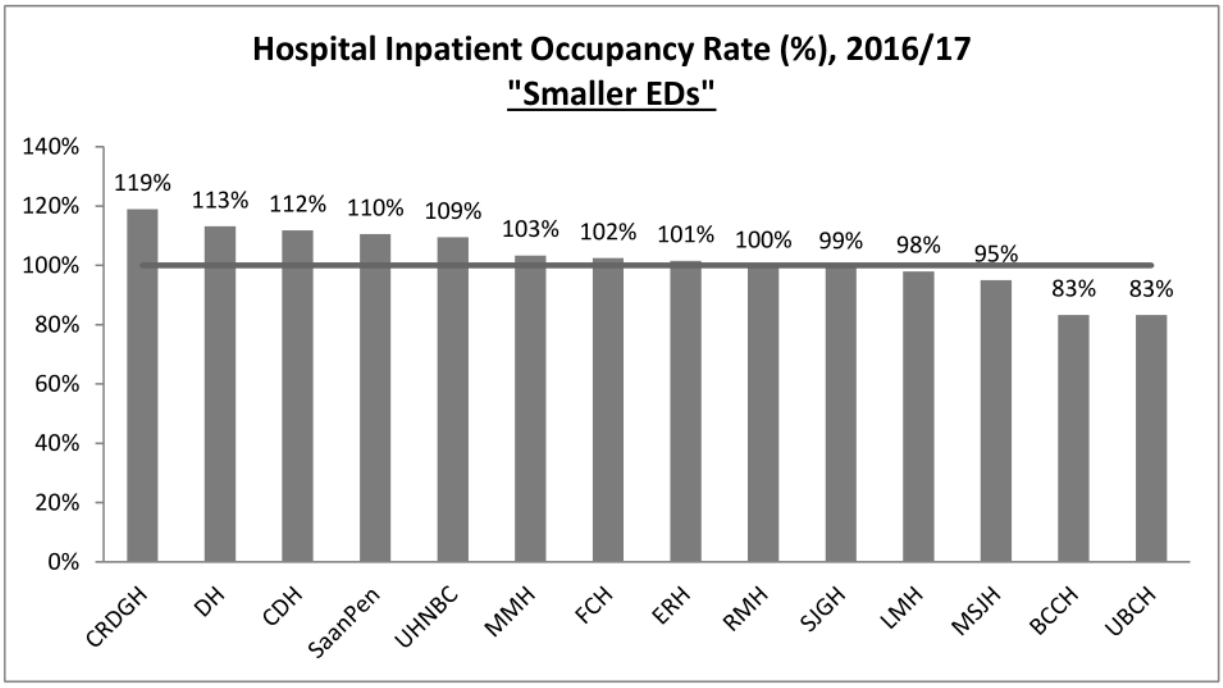












Appendix A – ED Crowding Literature Review

Emergency Department Crowding – A Literature Review

Background

In the last decade, crowding in the emergency department (ED) has become an increasingly significant public health problem worldwide and is described as the most serious problem affecting the reliably of the health care system (Santos, et al., 2016). According to the Canadian Association of Emergency Physicians, ED crowding is defined as a situation in which the need for emergency services exceeds available resources for patient care in the ED within appropriate time frames (Affleck, et al., 2013).

The B.C. Health Quality Matrix, developed in 2008, describes seven dimensions of quality in health care: acceptability, appropriateness, accessibility, safety, effectiveness, equity and efficiency (BC Patient Safety & Quality Council, 2012). These dimensions drive BC towards a high quality patient-centered approach. While significant progress has been made on enhancing patient-centered care, this may be compromised if patients experience long wait times to see a physician, leave without being seen, experience boarding in ED hallways while waiting for an inpatient bed, or are diverted away from the closest hospital when arriving by ambulance.

Building an understanding of how crowding diminishes the care delivery capabilities of the ED, and the outcomes of ED crowding on patient health and mortality will help shape policy and practices towards effective, safe and person-centred care. This review highlights the effects of ED crowding on patient outcomes and strategies to reduce ED crowding.

Methods

The parameters of the literature review included articles dated 2010-2016 and used two search queries: 1) 'patient outcomes of ED crowding' and 2) 'strategies to reduce ED crowding'. A total of 57 journal articles were reviewed by Ministry of Health staff that were specific to patient outcomes of ED crowding and/or strategies to reduce ED crowding, and are listed in the annotated references section of this literature review.

Findings on Patient Outcomes of ED Crowding

ED crowding is broadly influenced by a variety of internal and external factors including staffing, budgets, hospital size, type of services offered and location (i.e., rural, urban). While the severity of crowding may vary between hospitals it is a systemic issue that affects numerous hospitals in Canada and worldwide. Crowding can occur at any stage of the emergency patient journey - often referred to as the stages of input, throughput and output (Fee, et al., 2011).

The magnitude and significance of ED crowding on patient outcomes is well documented. The literature demonstrates that ED crowding is not just an ED problem, but rather a hospital system problem that should be addressed by hospital management. The literature strongly suggests ED crowding is associated with adverse clinical outcomes and can have considerable impact on quality of care and mortality.

From the literature reviewed, outcomes of ED crowding were grouped into five key areas. While these areas will not be exhaustive, they cover an extensive number of patient outcomes reported.

1. **Patient Satisfaction:** The articles reviewed clearly acknowledged ED crowding has a negative effect on patient satisfaction. Patient satisfaction is an essential and widely used indicator for measuring the quality in health care provided, as it affects several outcomes – clinical, systems-based, and most importantly the patient-centered delivery of quality health care. Reduced patient satisfaction is caused by typical ED crowding problems including: prolonged length of stay (LOS), higher rates of people leaving the hospital without being seen (LWBS), longer waits in assessment areas, and longer waits for treatment (Pines and McCarthy, 2011; Arya et al., 2013; Santos et al, 2016; Sayah et al., 2016).

   A number of external factors that contribute to ED crowding may also contribute to a decrease in patient satisfaction and poor outcomes. These factors include: higher patient volumes, fewer hospitals, nursing staff shortages, and the decreased number of inpatient beds (Johnson and Winkelman, 2011).

2. **Increase in Mortality and Morbidity**: Several of the journals reviewed investigated the effect of ED crowding on inpatient and outpatient mortality and morbidity. Articles pointed to a slight increase in inpatient mortality during periods of high ED crowding. This supports the opinion that ED crowding is an indicator of poor quality of care (Carter et al., 2013).

   Singer et al. showed in 2011 that there is a direct relationship between the time spent in the ED waiting for an inpatient bed and the overall mortality rate even after adjusting for co-morbidities and acuity. The risk of increase mortality became significant with wait times as short as 6 hours.

   Crowding and delays in the ED are associated with a greater risk of adverse outcomes for patients overall – increasing mortality rates among admitted patients and increasing death rates among discharged patients (Vermeulen et al., 2014). The increase in both morbidity and mortality can be the result of a patient acquiring new health problems due to errors (i.e., charting errors, medication errors, inappropriate monitoring), developing contagious secondary illnesses (i.e., hospital acquired infection, influenza), infection (i.e., sepsis) or delay/absence of time sensitive treatment (i.e., stroke, sepsis, asthma) or transfer (i.e., surgery, testing) (Arya et al., 2013; Fenn et al., 2015; Gaieski et al., 2017; Pines and McCarthy, 2011; Rooney and Schilling, 2014; Santos et al., 2016;).

3. **Delays in Interventions**: Timely access to medicine and treatment can be delayed during high levels of ED crowding due to increased wait times, increased hand-offs, and LOS. ED crowding also contributes to high rates of patients who leave without being seen (LWBS) which may further delay treatment.

   Evidence points to crowded EDs delaying cardiac interventions, resuscitation delays, delayed asthma treatment, delayed pain management, antibiotic delays, and administration delays in interventions and timely access to specialized care (Hong et al., 2013; Sills, et al., 2011). Filippatos and Evridike (2015) found patients with acute coronary syndrome are more likely to experience adverse outcomes (e.g. cardiac arrest, congestive heart failure, hypotension or death) during the highest levels of crowding. Gaieski et al., (2017) found ED crowding significantly delays IV fluids and antibiotic treatment for sepsis patients as occupancy rate increases, despite the fact that antibiotic treatment beginning within one hour of suspected sepsis infection was a crucial factor in the morality outcome of patients. Overall, ED crowding was associated with delays in treatment and an increased risk of poorer outcomes (Paul and Lin, 2012; Carter et al., 2014; Rooney and

Schilling, 2014; Arya et al., 2013; Santos et al., 2016; Fenn et al., 2015; Silvester et al., 2013; Pines and McCarthy, 2011; Eitel et al., 2010.)

4. **Quality of Care:** ED crowding occurs in hospital EDs when there are more patients than staffed treatment beds and wait times exceed a reasonable period. Crowding often results in boarding, when patients lie in ED hallways on stretchers waiting for an available inpatient bed. Crowding may also involve the inability to appropriately triage patients, resulting in large numbers of patients waiting unseen in the waiting area.

   A multitude of studies have been conducted showing the association between ED crowding and a negative effect of quality of emergency care (Fee et al., 2011, Singer et al., 2011). These studies have focused largely on the timeliness of care, but also on other quality domains such as patient-centeredness and effectiveness. Research from Stang et al. (2015) concluded the three measures most frequently linked to the quality of care include: the number of patients in the waiting room, ED occupancy (percentage of ED beds filled), and the number of admitted patients in the ED awaiting in-patient beds. Their research was less conclusive and highlighted the gap in knowledge between the association of ED crowding and measures of quality. Further research is required to determine if interventions to alleviate crowding affect quality of care.

5. **Patient Safety Issues**: Despite increased political, administrative, and public awareness, ED crowding continues to rise in frequency and severity (Affleck, et al., 2015). Quality emergency care is a fundamental aspect of the modern health care system and timely access is essential to providing safe care.

   Evidence points to an increase in adverse events (when patients waiting to be admitted are placed in compromised settings like hallway boarding, waiting room crowding) during times of increased crowding within the ED. Guttman et al., (2011) defined an adverse event as admission to hospital or death within seven days of discharge from the ED. Their study found patients who present to an ED and had long wait times (LOS) and were discharged have a greater risk of an adverse event. Other research confirms ED crowding can jeopardise the safety of the patient and affects the delivery of effective and efficient care (Hospital Case Management, 2013; McHugh et al., 2013; Arya et al., 2013; Carter et al., 2014; Silvester et al., 2014; Eitel et al., 2008; Fee et al., 2011; Johnson and Winkelman, 2011; Santos et al., 2016).

Findings on Strategies to Reduce ED Crowding

A 2011 review of ED crowding in New Zealand showed most challenges identified relate to issues in the patient journey outside the control of the ED (Ardagh et al., 2011). This reinforces the understanding that improving acute care and resolving ED crowding requires effort across the whole patient pathway. In Australia, Crawford et al. (2014) adopted the UK's 4-hour National Emergency Access Target to share the responsibilities and solutions for crowding across the ED and hospital. Their areas improved delays in radiology, lab, and medical records as well as nursing and administrative staff shortages.

From the literature reviewed, strategies to reduce ED crowding were grouped into eleven key areas. While these areas may not be exhaustive, they cover much of the whole patient pathway.

1. **Site Specific Capacity Management –** Many ED experts agree the optimal occupancy levels are 85% of total hospital capacity. A retrospective analysis of inpatient and ED data from 23

hospitals in Queensland, Australia however, found hospitals of various sizes differed in their ability to respond to capacity thresholds (Khanna et al., 2012). Modern hospital systems were found to operate efficiently above the often-prescribed 85% occupancy level, with optimal levels varying across hospitals of different size. Choke points occurred at higher occupancy levels at smaller hospitals, possibly indicating they were more resilient and better able to respond to rising occupancy. Optimal occupancy levels need to be calculated specifically for each hospital service – as the data showed choke points varied between 86% and 106% dependent on hospital size.

2. **Patient flow:** Elder et al. (2015) pointed to four specific factors impacting patient flow: 1) increasing number of visits to the emergency department, 2) an aging population, 3) increasing number of chronic diseases, and 4) difficulty in securing primary community service. Studies that reported reducing the use of the ED by low acuity patients through hospital diversion had no effect in reducing access block (Foreo et al., 2010; Emeny and Vincent, 2013). McClelland et al. (2011) point to seven success factors to improve patient flow and quality improvement: 1) recognize ED crowding is a hospital-wide problem, not an ED problem, 2) make transparency an organizational value, 3) build multidisciplinary hospital-wide teams to drive quality improvement, 4) guarantee top management's support, 5) recruit a 'champion', 6) use formal improvement methods, 7) commit to rigorous metrics. Mason, et al. (2016) identified scheduling elective surgeries throughout the week rather than bunching them on Mondays and Tuesdays improves patient flow. This recommendation was shared by Eitel et al. (2010).

3. **Patient Streaming:** The literature points to patient streaming as an effective intervention to direct patient flow in a busy/crowded ED. Patient streaming directs patients with minor injuries or illness to a separate area of the ED for nurse led triage – reducing the number of patients waiting in the ED and fast tracking less acute patients (Crawford, et al., 2014). A review of ED crowding in Australian and New Zealand hospitals showed streaming benefits all ED patients, reducing wait times and freeing doctors to tend to the more emergent patients (Ardagh et al, 2011; Crawford et al, 2014). A drawback of patient streaming is the potential to miss comorbidities or complications in patients considered to be lower risk (Crawford, et al., 2014). Some EDs have moved away from the traditional linear processing model of ED flow to a more parallel process where patients are seen by a provider soon after arrival and lab orders, workups and imaging are simultaneously processed using team triage techniques (McClelland et al., 2011; Ming et al., 2016).

4. **Improved Patient Pathways:** Emeny and Connolly (2013) identify eight specific principles to improve patient pathways and reduce ED crowding. These principles should be implemented 7 days a week as demand for ED patient care does not slow down on weekends. The principles identified were: 1) early senior review – patients are evaluated as early as possible by a senior level clinician, 2) daily senior review – inpatients rounds are conducted daily by a senior clinician, 3) focus on discharge – a team based approach to expediting discharges before lunch, 4) continuity of care – managing patients with the fewest handovers as possible, 5) matching capacity to demand and reducing unwarranted variation – identifying and publicizing staffing levels to match ED demand periods, 6) internal professional standards – set standards between colleagues and departments around time, quality, or other measurement, 7) ambulatory emergency care – creating same-day emergency care without admittance or for a short stay to

ensure rapid diagnosis and treatment, 8) managing patient flow streams – develop models of flow and care for different types of patients (i.e.: short stay, specialty, frailty). Other literature discussed improved patient pathways as critical pathways for patients using standardized treatments. Eitel et al. (2010) argued improving the patient pathway based on the condition reduces variability in care and treatment time by initiating standardized sets of orders and tests for each patient that presents with the condition (i.e.: pneumonia patients).

5. **Physician-Led Triage**: Though nurse-led triage is currently the standard triage model worldwide (FitzGerald, et al., 2010), physician-led triage has been cited in the literature as a possible solution to poor emergency department flow (Jarvis, 2016). A review by Azeredo et al. (2015) found the Manchester Triage System effective at prioritizing the care of selected patient profiles. The Emergency Severity Index is another common triage system used in the US, with similar scales used in Canada, Australia, and the UK. The model reduces variability, LOS, LWBS rates, patient satisfaction and enhances service responsiveness (Arya et al., 2013).

6. **Modelling:** Discrete event simulations have been used successfully by Paul and Lin (2012) to improve patient throughput and waiting in EDs. Likewise Klein and Reinhardt (2012) found patient flow computer simulations allow ED stakeholders to assess operational interventions, develop performance measures and produce estimates for budgeting and planning. They attest simulation platforms can be maintained using Microsoft Excel program as they are as effective as computer simulations but easier to use, understand and implement. Unified language models of the patient journey in a regional ED were successfully used to identify bottlenecks that contribute to crowding and the source of the delays (Martin et al., 2011). The model driven approach reviewed by Martin et al. (2011) showed the physical layout of the triage area was counterproductive to efficient triaging.

7. **Process Improvements:**
   Multidisciplinary teams – Boyle, et al. (2015) points to multi-disciplinary teams of decision makers on each ward of the hospital to ensure timely and daily discharges from hospital beds. They argue this strategy would focus on removing the exit block rather than compromising patient safety by holding up ambulances or boarding patients in the ED or inpatient wards. Patient flow teams comprised of leaders across hospital departments have also helped hospitals better understand specific areas that need improvement and to close gaps in the system (i.e., faster bed cleaning to hasten admissions) (Emergency Department Management, 2012).

   Lean – The Lean management techniques and various methods were reviewed in several literature articles as a way to improve emergency department flow (Vose, et al., 2014; Vermeulen, et al., 2014; Chang et al., 2016, Holden, 2012; Eitel, et al., 2010) and improve patient discharge times (Beck et al., 2016). Chang, et al. (2016) noted the utilization of a variety of tools and techniques including Lean were effective in high performing hospitals but less effective in low performing hospitals which tend to be overcome with resource issues and lack of leadership support. After reviewing nine studies focused on the use of Lean tools, one of the biggest roadblocks to Lean success was resistance to change from staff and the inability to collaborate (Bucci et al., 2016). These authors caution the sustainability of these improvements has not been well documented.

8. **Scorecards**

   Patient flow scorecard – To capture the complex nature of the patient flow process, hospital and healthcare administrators have utilized the patient flow scorecard. Administrators used this method at the Children's Hospital of Philadelphia where they developed a five-domain patient flow scorecard to highlight specific areas where opportunities existed for improvement. The scorecard gathered metrics from: 1) the ED and ED-to-inpatient transition, 2) bed management, 3) discharge process, 4) room turnover and environmental services department activities, and 5) scheduling and utilization. In each of the five domains several components are measured and assigned between one and four points for a total maximum overall score of 100. Challenges in this process included consistent staff reporting, staff commitment, and understanding the results (Emergency Department Management, 2012).

   Balanced scorecard – Initially developed as a business management system tool, the balanced scorecard helps ED managers understand the ED as a service business. This approach allows for a view of the ED from four different perspectives: learning and growth, business process, customer (patient), and the financial perspective – allowing continuous tracking and response to improvement initiatives (Eitel et al., 2010). Challenges with implementing the balance scorecard include stakeholder buy in and accessing information technology programs to monitor and compare results (Eitel et al., 2010).

9. **Clinical Decision Units/Rapid Assessment Models/Observation Units/Short Stay Units:** Clinical Decision Units (CDUs) are specialized units located within the ED to manage patients who require a more prolonged period of observation, investigation, or treatment (Schull, et al., 2012). The CDU allows patients to be transferred from the ED but avoids the need for inpatient admission. Improvements in the operation of the ED and a noticeable reduction in the rate of admission for high and moderate acuity patients have been noted with CDUs (Schull, et al., 2012).

   Jarvis (2016) describes rapid assessment models (RAM) as the assessment, investigation and initial treatment of patients immediately after arriving in the ED. The goal of this quick assessment coupled with prompt start of treatment is to reduce the amount of waiting time between each step. This type of approach has been viewed as improving patient flow in the ED; however the cost of its implementation is often cited as a barrier to its utilization.

   Implementing a dedicated medical observation unit (MOU) outside the ED is another strategy designed to improve throughput by monitoring patients for 8-24 hours rather than discharging them from the ED. MOUs can result in demonstrated cost savings, greater revenues and decreased LOS. MOUs currently in place report discharging patients in less time, increased patient satisfaction and a lower rate of misdiagnosis (Gabele, et al., 2016). Observation units were also shown to be a promising initiative in helping resolve crowding issues in New Zealand EDs (Ardagh, et al., 2011).

   A short stay observation unit (SSOU) is an area located within the ED to treat patients who require more than 4 hours of observation/treatment but are not likely to require hospital admission (Crawford et al., 2014). Implemented in Australian hospitals in 2010 as an initiative to meet ED discharge/transfer targets, short stay units are shown to work well in straightforward cases.

10. **Early Discharge Planning**: While discharge procedures vary greatly between and within jurisdictions, the overall discharge protocol has been viewed as a contributor to emergency department congestion. Discharge planning should involve both the patient and caregiver and begin as early as day one with an anticipated discharge date (Hospital Case Management, 2013; Ardagh et al, 2011). Early discharge planning (i.e: starting on first day of hospital admission) and informing patients and families of anticipated discharge dates help free up beds in the hospital and reduce boarding (Emeny and Connolly, 2013).

11. **ED Expansion:** A natural assumption would be that increasing the size of the emergency department would be able to reduce ED crowding. This is likely not the case however and ED expansion has actually been shown to increase crowding (Mumma et al., 2014)

Conclusions

As seen in the literature reviewed, the etiology of crowding is multifactorial, with a multitude of factors both internal and external contributing to its cause. In addition to ED crowding, other significant influencers affect patient satisfaction, outcomes and mortality including: decrease in hospital capacity, closure of EDs, increase in ED patient volumes, inadequate staffing (nursing shortages), bed shortages, patient boarding in the ED and inefficiencies in hospital processes.

There is general consensus that the effort to improve acute care and resolve ED crowding requires a whole system solution, not just improvements and efficiencies in the ED. While a host of possible strategies to reduce ED crowding were explored in this review, there is still a limited amount of data available on successful long-term standardized strategies. One crucial factor for success that was common among much of the literature however was support from health executives, leaders, and management to implement long term change.

Annotated References

1. Affleck, A., Parks, P., Drummond, A., Rowe, B., and Ovens, H. (2013). Emergency department overcrowding and access block. Canadian Journal of Emergency Medicine, 15(6), 359-370.

The authors describe ED overcrowding as a complex, multi-dimensional health services problem. They argue while the inappropriate use of EDs across Canada have been blamed for ED crowding, the primary cause is hospital overcrowding (access block). ED overcrowding can occur at all levels (input, throughput and output). While the primary cause of ED crowding is the lack of inpatient beds for admitted patients, there are also system bottlenecks that occur downstream from the ED including the outflow of patients from the ED, to hospital and then back into the community. Hospital efficiency problems include a shortage of acute care beds, staffing shortages (nurses/doctors), limited community care resources, poor communication at discharge and confusion on patient accountability. The following are recommendations moving forward: 1) establish national benchmarks for key intervals in the ED experience and report on them publicly, 2) link ED LOS benchmarks to incentives and infrastructure investment, 3) mandate a national ED repository of ED visit data, and 4) optimize bed management and proactively plan bed capacity. To address access block specifically solutions at the 1) input stage include: improving primary care access, improving EMS coordination, 2) throughput stage include: engage in process improvements like LEAN, invest in improving staffing in the EDs, match staffing to patient demand, use a patient tracking system (i.e.: ED Information Systems), utilize medical directives, utilize

fast track areas, utilize rapid assessment zones, establish formal intake policies and processes, establish observation units/clinical decision units to improve flow, have dedicated ED satellite labs, and utilize better teaching practices; 3) output solutions include: implement overcapacity protocols, and formalize hospital wide flow policies and processes.

2. American College of Emergency Physicians (2004). Emergency Department Crowding: Information Paper. Accessed online August 2017: https://www.acep.org/search.aspx?searchtext=definition%20emergency%20department%20crowding.

3. Ardagh, M., Tonkin, G., and Possenniskie, C. (2011). Improving acute patient flow and resolving emergency department crowding in New Zealand hospitals – the major challenges and the promising initiatives. The New Zealand Medical Journal, 124(1344), 64-73.

   In response to concerns about ED crowding and pressure to focus more on acute care as identified by a quality in ED working group, the target 'shorter stays in emergency departments' created a goal that 95% of patients will be admitted, discharged or transferred from an ED within 6 hours. A small working group visited all district health boards (DHB) to understand each of their challenges and successes to create a delivery plan for achieving the shorter stays goal. This paper reviewed 10 of the most common challenges identified by the DHBs and how they are addressing them. The top 10 challenges were: 1) access to hospital beds, 2) access to diagnostic tests, 3) inpatient team delays, 4) increased demand for ED services, 5) ED facility deficiencies, 6) ED staff deficiencies, 7) delays to discharge of inpatients, 8) difficulty engaging hospital staff in changes, 9) difficulty accessing aged care beds, and 10) nights and weekends. In total, 15 of 21 DBHs indicated there were barriers in access to hospital beds, access to diagnostic testing, and inpatient team delays. Promising initiatives in the DHBs included: the creation of ED observation units, good discharge planning, patient streaming through an enhanced ED layout, and engagement of ED senior and department staff. Most of the top 10 challenges, including the top 3 related to issues in the patient journey are outside ED control, which reinforces the understanding that improving acute care and resolving ED crowding requires effort across the whole patient pathway.

4. Arya, R., Wei, G., McCoy, J., Crane, J., Ohman-Strickland, P., and Eisenstein, R. (2013). Decreasing length of stay in the emergency department with a split Emergency Severity Index 3 patient flow model. Academic Emergency Medicine, 20, 1171–1179.

   A retrospective chart review to examine the effect of a split ESI 3 flow model on the length of stay (LOS) for patients who were discharged from the ED was conducted in an urban, academic ED that sees over 70,000 adult patients a year. The objective was to determine the effect of implementing a split ESI 3 flow model on patient LOS for all discharged patients. The study analyzed 20,653 cases from 2011 and 20,215 controls from 2010. The study concludes the use of a split Emergency Severity Index level 3 triage flow system reduced LOS for five of the 12 most common ED complaints by 9% to 18% without increasing LOS for the most or least ill, despite a 3.9% increase in overall ED patient volume. This technique is recommended for EDs experiencing excessive LOS for middle and low-acuity patients or EDs with bed capacity constraints and sufficient volumes to warrant separating high and low-variability ESI 3 visits improved throughput and reduced length of stay in our ED.

5. Athlin, A., von Thiele Schwarz, U., and Farrohknia, N. (2013). Effects of multidisciplinary teamwork on lead times and patient flow in the emergency department: a longitudinal interventional cohort study Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine, 21, 76-86.

Long wait times for emergency care are claimed to be caused by overcrowded emergency departments and ineffective working routines. Teamwork may be a promising solution to these issues. The study aimed to investigate the effects of teamwork in a Swedish emergency department on lead times and patient flow. The study was a longitudinal non-randomized intervention study. Data was collected for five, two-week periods over 1.5 years. Conclusions suggest teamwork contributes to quality improvement of emergency care with small but significant decreases in lead time. Teamwork and reorganization of the care process may further improve patient safety by creating safer and better communication between staff members and with staff and patients. Teamwork is not likely to be sufficient to bring about larger decreases in lead times or for meeting the goal of a 4-hour turnaround target in emergency departments.

6. Bandiera, G., Gaunt, K., Sinclair, D., and Trafford, A. (2014). Emergency department crowding and long wait times: taking a corporate approach to improving patient flow. Healthcare Quarterly, 17(4), 34-40.

St. Michaels's Hospital (Toronto) has some of the most challenging ED crowding and longest wait times in Ontario. In 2008, the hospital undertook an organization-wide corporate approach to the challenge of patient flow and significantly improved key ED flow metrics for admitted and non-admitted patients. This coincided with the Ministry of Health and Long-Term Care (MOHLTC) new ER Wait Time Strategy to improve access to emergency care in hospitals and urgent care centres and the ER Pay for Results Program (P4R) which provided financial incentives to the 23 poorest performing EDs plus workshops to share best practices. Funding helped hospitals achieve ED wait-time targets and hospitals used the funding how they wished. St. Michael's based its approach on local solutions, and funded a Patient Flow Advisory Council (PFAC) and a Corporate Patient Flow Performance Team (CPFPT). The PFAC assisted the CPFPT prioritize, consulted with stakeholders, and evaluated outcomes. The CPFPT conducted project and change management, process mapping, statistics, etc. to support the strategies. Initiatives included: tracer reviews to examine ED cases with a LOS over 24 hours, discharge toolkit, before eleven discharge (BED) to generate in-patient bed capacity, and rapid assessment and planning (RAPID) to expedite patient movement from the ED to the internal medicine floor. The corporate approach showed positive results without compromising patient satisfaction, surgical flow/cancellation rates or unplanned readmissions within 7 days. The corporate approach had four major advantages: 1) established accountability and oversight at high level, 2) allowed quality improvement focus by vetting new initiatives through a corporate lens, 3) built alignment across the organization, and 4) offered a forum for discussion of hospital operations.

7. BC Patient Safety & Quality Council (2012). BC Health Quality Matrix. Available online: https://bcpsqc.ca/documents/2012/09/BCPSQC-Matrix_FEB20.pdf

The BC Health Quality Matrix is a framework aimed at providing a common understanding about health care quality. The Matrix is based on well-known frameworks in Canada and the US, but has been customized to the BC context by the BC Patient Safety & Quality Council's Health Quality Network. It is designed to be used by health care delivery organizations, leaders and practitioners for strategic planning, quality improvement programming, measurement and evaluation at the program, facility and system-

wide level. The Matrix is comprised of Dimensions of Quality applicable to patients and clients: acceptability, appropriateness, accessibility, safety, and effectiveness. Two other dimensions of quality – equity and efficiency, measure the performance of the healthcare system where the services are delivered.

8. Beck, M., Okerblom, D., Kumar, A., Bandyopadhyay, S., Scalzi, L. (2016). Lean intervention improves patient discharge times, improves emergency department throughput and reduces congestion. Hospital Practice, 44(5), 252-259.

   ED congestion is a threat to hospital quality, staff morale, patient safety and patient satisfaction. ED throughput and boarding practices depend on how efficiently the inpatient discharge process can generate open beds to allow ED admissions. When inpatient discharge processes fail to generate enough open beds at the rate required by ED admission requests, the ED throughput slows and ED boarding occurs. Optimal patient flow reduces waiting and optimizes the use of hospital resources. Lean identifies eight types of waste: defects and rework, overproduction, waiting, non-utilization of resources, transport, inventory, motion and extra processing. Based on the results of a previous paper which applied Lean Six Sigma (LSS) concepts on an academic children's hospital to advance patient discharge times, this paper further examined if the lean interventions were the primary driver in this improvement (the initial study showed LSS interventions reduced the median time of patient discharges by 93 min). The authors concluded organizations can relieve critical access-blocks to acute care beds by studying new staffing models and employing afternoon rounds that plan for next-day discharges. Investing in these two initiatives would emphasize bed usage efficiency versus additional bed investing. As health-care payment reforms shift from rewarding volume to rewarding value, organizations must improve quality through efficiency which requires involving the ED and the hospital system. Implemented changes should be process-focused, measurable, meaningful and value generating – all pillars of the LSS methods.

9. Boyle, A., Viccellio, P., Whale, C. (2015). Is "boarding" appropriate to help reduce crowding in emergency departments? BMJ, 350, pp. 2249-2251.

   Three physicians respond to questions on boarding. Two physicians agree moving patients from full EDs to hospital ward corridors is safe and necessary to accommodate new emergencies. They argue having patients unassessed and waiting in ambulances outside the full ED is a worse situation than having a select number of treated patients waiting in the corridor of the ward they will be transferred to as an inpatient. In higher crowding situations each inpatient unit in the hospital can take 1-2 of the least sick ED patients, leaving capacity to deal with the more sick patients in the ED. This would allow ambulances to return to the job more quickly and allow patients to be transferred to the ward while paperwork processes are completed. It would be most ideal to board patients in their final destination ward. One physician argues there is danger in displacing the problem and believes there should be a more comprehensive response to inefficient patient flow. Removing 'exit block' rather than better patient flow compromises patient safety and contributes to poor health outcomes such as excess mortality. EDs should work with wards to encourage better flow. Boarding fails to tackle the root cause of crowding – the whole system (community providers, ambulances, mental health, ED and hospital) needs transformation to improve patient flow. One approach is a multi-disciplinary team of decision makers in each ward to ensure appropriate discharges from hospital beds seven days a week.

10. Bucci, S., de Belvis, A., Marventano, S., De Leva, A., Tanzariello, M., Specchia, M., Ricciardi, W., and Franceschi, F. (2016). Emergency department crowding and hospital bed shortage: is Lean a smart answer? A systematic review. European Review for Medical and Pharmacological Sciences, 20(20), 4209-4219.

    Nine studies were reviewed focused on the use of Lean principles and tools to solve the problem of crowding in EDs. Lean is defined as a quality improvement method which identifies the root cause of a delay or problem with a bottom-up approach, starting with the workers and workplaces to understand the issues. Despite some early success, the study demonstrated the reorganization of healthcare services using a Lean philosophy is unknown and not yet standardized. As Lean innovation focuses on the whole process – involving top management and frontline staff, everyone has to improve their problem solving skills and collaboration. One of the biggest roadblocks in the Lean process is resistance to change from staff and inability to collaborate. The author referenced studies which demonstrated structural changes using Lean reorganization and design layout of the ED has been effective in improving patient flow, length of stay (LOS) and leave without being seen (LWBS) numbers. Sustainability of these improvements has not been well documented. Lean changes should be pursued with a human-centered approach, recognizing the value of people, patients and workers. Strong leadership is required to build motivation, drive the changes and lead improvement projects. Managing patient flow, starting from the arrival of patients in ED had a positive impact on LOS.

11. Carter, C., Pouch, S., and Larsen, E. (2013). The relationship between emergency department crowding and patient outcomes: a systematic review. Journal of Nursing Scholarship, 46(2), 106–115.

    The purpose of this systematic literature review was to assess the relationship between ED crowding and patient outcomes. A total of 196 abstracts were screened and 11 articles met inclusion criteria. Three of the eleven studies reported a significant positive relationship between ED crowding and mortality either among patients admitted to the hospital or discharged home. Five studies reported that ED crowding is associated with higher rates of patients leaving the ED without being seen. Although measures of ED crowding varied across studies, more critically ill patients seek care in the ED and insufficient inpatient hospital capacity has resulted in patient boarding in the ED for longer periods of time. The study concludes that ED crowding is a major patient safety concern associated with poor patient outcomes.
12. Chang, A., Keller, S., Cohen, D., Prewitt, L., Laurie, A., Fu, R., McConnell, K., Sun, B. (2016). Hospital strategies for reducing emergency department crowding: a mixed-methods study. Annals of Emergency Medicine, 68, S58.

    Four high performing and 4 low performing hospitals were recruited for the study to identify best practices to decrease ED crowding. Characteristics studied included: geographic destination (urban vs rural), region, hospital occupancy, and ED volume. Although ED crowding was recognized at all hospitals as a hospital-wide issue, the strategies for addressing ED crowding varied widely. In both high and low performing centres strategies included: improvement of front end processes (physician triage, nurse initiated protocols), using consultants to utilize LEAN methods, and data-driven strategies. Low performing hospitals identified barriers to care such as nurse shortages, lack of resources and lack of support for change from leaders. High performing hospitals reported executive leadership was highly engaged in ED crowding reduction efforts. High performing hospitals also reported making multiple changes – reduction to front end ED, back end changes to decrease radiology, lab and bed turnover times, and continuous

improvement processes to evaluate, modify and enhance current best practices. High performing hospitals engaged proactively, low performing hospitals had reactive strategies.

13. Crawford, K., Morphet, J., Jones, T., Innes, K., Griffiths, D., and Williams, A. (2014). Initiatives to reduce crowding and access block in Australian emergency departments: A literature review. Collegian, 21(4), 359-366.

    This review highlighted key strategies adopted by emergency departments to reduce delays and streamline patient flow including: waiting room nurses, streaming, rapid assessment teams, short stay units and care coordination programmes. The most common causes of ED crowding in Australian EDs are: increased complexity and acuity of patients presenting; overall increase in patient volume; lack of inpatient beds; shortage of nursing and administrative staff; radiology result delays; lab services; limited physical space within the ED; language and cultural difficulties; and medical documentation requirements. Similar to the UK, the Australian government introduced the National Emergency Access Target in 2010 requiring patients be transferred or discharged from the ED within 4 hours. Hospital initiatives to meet this target included:
    - Nurse initiated interventions – nurses examine patients and order testing. Has been successful in decreasing pain assessment and ED LOS and increase patient satisfaction.
    - Waiting room nurses – to support the triage nurses
    - Patient streaming – directing patient flow by separating minor cases from complex (fast track) - shown benefit to ED patients by reducing LOS and LWBS but some evidence of re-presentation.
    - Rapid assessment teams – direct flow, lower risk patients are seen by a team and treatment is expedited. Shown to reduce patient wait times, improve flow and increase patient outcomes.
    - Care coordination teams – health and nursing team (i.e.: social worker, nurse, etc.) deal with at risk patients and facilitate safe discharge plan. At risk includes elderly, frequent ED users, homeless, and patients with drug and alcohol addictions.
    - Short stay observation units – area located within ED to treat patients who require more than 4 hours of observation/treatment but unlikely to require admission to hospital.

14. Eitel, D., Rudkin, S., Malvehy, M., Kileen, J., and Pines, J. (2010). Improving service quality by understanding emergency department flow: a White Paper and position statement prepared for the American Academy of Emergency Medicine. The Journal of Emergency Medicine, 38(1), 70-79.

    The goal of this study was to provide ED managers an understanding of the ED as a service business, describe how to capture the process of flow through the ED, and discuss strategies to improve service quality by understanding ED throughput. The study also sought to provide emergency physicians and managers with an overview of some of the latest technology on process reengineering to apply to EDs. The paper suggests focus on individual events, analyze the entire system, and identify key bottlenecks. Process flow can be analyzed with systems engineering techniques and the discipline of operations management. These business management methods can provide concepts and tools to hospital and health care systems; helping plan, design, and manage day-today operations, processes, and service delivery systems. The strategies may uncover the service delivery system is bigger than the ED. The ED is one step in the continuum of hospital care delivery, serving the needs of the community.
15. Elder, E., Johnson, E., and Crilly, J. (2015). Review article: systematic review of three key strategies designed to improve patient flow through the emergency department. Emergency Medicine Australasia, 27(5), 394-404.

A literature review of 3 key strategies designed to promote patient ED throughput. Review searched: ED flow/throughput, ED congestion, crowding, crowding, models of care, physician-assisted triage, medical assessment units, nurse practitioner, did not wait (DNW) and ED length of stay (LOS). Review indicated nurse practitioners within ED, physician-assisted triage and the implementation of medical assessment units have all decreased ED congestion. ED nurse practitioners assess, diagnose, treat, prescribe and refer patients to other health specialists and can play a role in improving patient flow. Nurse practitioners have a positive impact on outcomes including wait times and unexpected presentations. Studies demonstrated physician assisted triage has potential to reduce ED congestion, LOS, patient satisfaction, laboratory and diagnostic imaging, and discharge of less emergent cases. Medical assessment units can reduce ED LOS, wait times for inpatient beds, ED crowding, admissions, overall patient days, and costs. Nursing roles and new models of care in EDs and hospitals are expanding to accommodate patients and to improve ED flow. Continuing education is needed to support the expanding nursing and medical roles. Methods to enhance the efficiency of these new roles for ED flow may include computerized technologies for requesting/referring patients for exams.

16. Emeny, R., and Connolly, V. (2013). Improved patient pathways can prevent crowding. Journal of Emergency Nursing, 20(10), 20-24.

    ED crowding creates a negative environment for patients, contributes to stress and poor job satisfaction among staff and can lead to EDs breaching the four-hour standard and other care quality indicators. In Canadian EDs, studies have shown ED crowding increases mortality rates at seven days, causes higher admission rates, and increases inpatient LOS for each hour they wait in an ED. Crowding is often seen as an issue of too many patients attending ED when other more appropriate alternatives exist. Solutions range from the diversion of inappropriate attenders to the creation of admission-avoidance schemes. Diversion schemes such as physician triage, urgent care centres, and primary care front ends appear to have little positive effect on attendance rates or the number of serious patients requiring treatment. Their effects on hospital crowding has been marginal. Well-focused admission avoidance schemes may be more successful; however it is dependent on sufficient appropriate capacity in alternative community services to meet people's needs. Some effective schemes focus on nursing home residents, repeat attenders and patients with heart failure. Results have been minimal outside of these patient groups. The only sustainable approach to reduce ED crowding is to focus on tactics that improve patient flow. Crowding is best tackled by the consistent application of eight principles: 1) early senior review, 2) daily senior review, 3) focus on discharge, 4) continuity of care, 5) matching capacity to demand and reducing variation, 6) internal professional standards, 7) ambulatory emergency care, and 8) managing patient flow streams.

17. Emergency Department Management (2012). Study: hospitals struggle to implement proven strategies for eliminating ED boarding, crowding. ED Management, 24(11), 121-124.

    Studies show that despite the steady increase in demand for emergency care, EDs are failing to take advantage of proven strategies to ease crowding. While every ED has its own unique challenges, researchers suggest patient boarding, one of the main drivers of crowding, is actually a hospital-level problem and not an ED problem. A recent study in the journal of Health Affairs highlights several strategies to remove admitted patients from ED hallways and improve patient throughput: rescheduling elective surgeries, moving boarding patients from the ED hallways to inpatient floor hallways to wait for an open bed, create a "bed czar" position to oversee the utilization of beds and to take charge when bottlenecks

occur. The resistance to implementing these changes is often administrative, resistance from departments who want to be in charge of their own processes.

18. Endacott, R., Cooper, S., Sheaff, R., Padmore, J., Blakely, G. (2011). Improving emergency care pathways: an action research approach. Emergency Medicine Journal, 28(3), 203-207.

    This study outlined the processes and outcomes of an action research study to reduce inappropriate attendances and unplanned pressures on staff in an English hospital ED from 2006 - 2008. The study utilized a single-site and multiple data sources. There were two aims: 1) identify cultural, training and infrastructure needs to redefine access and use of the ED, and 2) recommend a range of staff and programs to provide an appropriate mix of skills needed in the ED. A literature review and case study identified factors affecting the functioning, efficiency and costs of EDs and CDUs. ED attendance and hospital emergency admission data were similar to the national picture with regards to time/day of attendance and seasonal variation. A redefined system for accessing and using the ED requires it is essential to have useable management data and separation between roles of primary healthcare and the ED. Some of the frustrations from the study suggest that multiple policy initiatives can be counter-productive, especially when the policies either conflict, or set up conflicting imperatives on ED staff. The research provided recommendations to change practice and staffing to improve emergency care pathways. These were relevant to the local situation, but also provided indicators for other settings.

19. Fee, C., Hall, K., Morrison, B., Stephens, R., Cosby, K., Fairbanks, R., Youngberg, B., Lenehan, G., Abualenain, J., O'Connor, K., and Wears, R. (2011). Consensus-based recommendations for research priorities related to interventions to safeguard patient safety in the crowded emergency department. Academic Emergency Medicine, 18(12), 1283-1288.

    The Academic Emergency Medicine (AEM), the journal of the Society for Academic Emergency Medicine (SAEM), convened a consensus conference entitled ''Interventions to Assure Quality in the Crowded Emergency Department'' in conjunction with its 2011 SAEM annual meeting. This article describes the results of the ''Interventions to Safeguard Safety'' breakout session of the consensus conference. The objective of this session was to gather expert opinion to define knowledge gaps and priority research questions related to interventions designed to mitigate the effect of ED crowding on safety. The article summarizes the consensus-based recommendations made by the group and should help inform future research and funding in these areas. A consensus approach was used to develop a set of priorities for future research related to interventions to safeguard safety in the crowded ED as these priorities have the potential to inform future clinical and human factors research and extramural funding decisions related to this important topic.

20. Fenn, H., Carman, M., and Oermann, M. (2015). Vertical patient flow: is it safe and effective? Journal of Emergency Nursing, 41(3), 240-241.

    One initiative used in many emergency departments is vertical patient flow (VPF) – the use of non-traditional beds as patient evaluation areas to improve throughput and increase the number of patient visits. According to the study vertical patient flow is defined as the redesign of front end operations in the emergency department to better increase patient flow, throughput, and satisfaction. This method of bedding patients before triage and registration allows a provider to see a patient immediately, get the work-up started, and cut time off their length of stay. This approach is the basis for fast-track models

already in existence and often times the biggest impediment to rapid patient turnover is the time it takes to finish triaging the patient. Although, VPF has been implemented fully or partially or is in progress of implementation in over 70 hospitals in the United States, there is a lack of discussion in current literature and little research to support its effectiveness and no information on the impact of VPF on safe handling practices.

21. Filippatos, G., and Evridiki, K. (2015). The effect of emergency department crowding on patient outcomes. Health Science Journal, 9(1), 1-6.

    ED crowding has been described as the most serious problem endangering the reliability of health care system worldwide. The American College of Emergency Physicians defines crowding as a situation where the identified need for emergency services exceeds available resources for patient care in the ED, hospital, or both. ED crowding is divided into 3 interdependent components: input, throughput, and output. A commonly studied cause of ED crowding is demand for care. Between 1997 and 2007 the increase in total annual ED visits in USA was almost double and from 2001-2008 was 60% faster than would be expected from population growth. ED crowding has resulted in poor performance on wait time and LOS. In US hospitals the odds of being examined by a physician within the time recommended at triage declined by 30% from 1997 to 2006, wait time increased from 46.5 minutes to 58.1 minutes from 2003-2009 and ED LOS increased from 132 minutes in 2001 to 154 minutes in 2005. The six dimensions of quality - safety, effectiveness, patient-centeredness, efficiency, timeliness, and equity may all be compromised when patients experience long wait time to see a physician, LWBS, experience ED hallway boarding while waiting for an inpatient bed, or are diverted to other hospitals when arriving by ambulance.

22. Foreo, R., Hillman, K., McCarthy, S., Fatovich, D., Joseph, A., and Richardson, D. (2010). Access block and ED crowding. Emergency Medicine Australasia, 22(2), 119–135.

    This paper updated, summarized and integrated evidence concerning access block and ED over-crowding by looking at studies conducted 1998-2008. Trends in hospital admissions and bed availability, the contribution of access block and ED crowding to patient mortality were explored. The study included over 200 documents reported in Medline. The paper reported access block and ED crowding increased the mortality rate by 20-30%. Major increases in hospital admissions and ED presentations with no increase in hospital capacity to meet the increased demand were identified as the main cause of access block. The majority of the evidence on interventions that work comes from single hospitals rather than multicentre interventions. The reduction of low acuity attendances to ED is not effective in reducing access block. The rates of available beds at the national level have remained at the same level between 2.5 and 2.6 public acute beds per 1000 population since 2002, which ranks at the bottom of the Organisation for Economic Cooperation and Development (OECD) spectrum. The OECD average is 4 beds per 1000 population. The level of bed capacity therefore needs to increase to match present and future demand. A major barrier to future initiatives was reported being the absence of an integrated national bed strategy.

23. Gaieski, D., Agarwal, A., Mikkelsen, M., Drumheller, B., Sante, S., Shofer, F., Goyal, M., and Pines, J. (2017). The impact of emergency department crowding on early interventions and mortality in patients with severe sepsis. American Journal of Emergency Medicine, In Press.

    Emergency departments are designed to deliver time-sensitive treatments and interventions for patients presenting with critical illnesses and trauma including stroke, sepsis, and myocardial infarction. Crowded

EDs however have been shown to increase mortality, time to treatment, and length of stay. The research investigated if ED crowding would delay time to intravenous fluids and antibiotics, decrease the protocol of care, and increase mortality for patients presenting with severe sepsis or septic shock. Nearly 3,000 ED patients with severe sepsis were evaluated during the study period. Results confirmed ED crowding causes significant delays to the initial administration of intravenous fluids and antibiotics, and decreases the implementation of protocol specific care. Contrary to the research hypothesis however, crowding did not significantly impact mortality.

24. Guttmann, A., Schull, M., Vermeulen, M., and Stukel, T. (2011). Association between waiting times and short term mortality and hospital admission after departure from emergency department: Population based cohort study from Ontario, Canada. BMJ, 342.

    This paper sought to determine retrospectively whether patients who are not admitted to hospital after attending an emergency department during shifts with long waiting times are at risk for adverse events. Adverse events are defined as death or hospital admission within seven days of leaving the ED. The setting was high volume emergency departments in Ontario, Canada, fiscal years 2003-7. Patients presenting to EDs during shifts with long mean waiting times might be at increased risk of death and admission in the subsequent seven days, regardless of acuity on presentation. As mean length of stay increases, so does the risk of subsequent adverse events. Key points: 1) for every extra hour of mean LOS in an ED, in similar patients at the time of presentation, there is an association with increased seven day mortality and admission to hospital in those who are discharged home or leave without being seen, 2) patients who LWBS do not have a higher adjusted risk of adverse outcomes compared with patients who are seen and discharged, 3) waiting times have important implications for patients who attend emergency departments, most of whom go home after their visit.

25. Gabele, D., Bugais, C., Laguna, J. (2016). Medical observation units and emergency department collaboration: improving patient throughput. Journal of Nursing Administration, 46(7-8), 360-365.

    Implementing a dedicated medical observation unit (MOU) outside the ED is a strategy to improve throughput by monitoring patients for 8-24 hours rather than discharging from the ED. MOUs currently in place report discharging patients in less time, increased patient satisfaction and a lower rate of misdiagnosis. The paper outlines one hospital's journey to implement an MOU and the phases of implementation. While the findings of the study are limited in that they only focus on one hospital observation unit, it demonstrates the benefits of an MOU through a real world example – efficiency, cost savings, improved throughput, and collaboration between staff.

26. Holden, R. J. (2012). Lean Thinking in Emergency Departments: A Critical Review. Annals of Emergency Medicine, 57(33), 265-278.

    This study critically reviewed 18 articles describing the implementation of Lean in 15 EDs in the United States, Australia, and Canada. Lean is described as a bundle of concepts, tools and methods used for decreasing costs and improving the quality and safety of care. Hospitals and health care leaders apply Lean techniques to combat problems due to errors, delays and crowding. This review revealed numerous ED opportunities for improvement in EDs and hospital-wide using Lean, but also revealed there were limitations. Patient care usually improved after implementation of Lean, with many EDs reporting decreases in length of stay (LOS), waiting times, and number of patients leaving the ED without being seen

(LWBS). Success factors included: employee involvement, management support and preparedness for change. Despite some methodological, practical, and theoretic concerns, Lean appears to offer significant improvement opportunities.

27. Hong, K., Shin, S., Song, K., Cha, W., and Cho, J. (2013). Association between ED crowding and delay in resuscitation effort. American Journal of Emergency Medicine, 31, 509–515.

    This paper describes a retrospective study to evaluate whether ED crowding is associated with delayed resuscitation efforts (DREs) that resulted in hospital mortality. The sample included all adult patients who entered the resuscitation room and underwent resuscitative procedures from October 2008 to May 2010. Delays in resuscitation efforts occurred more frequently on crowded days and were associated with higher in-hospital mortality.

28. Hospital Case Management (2013). ED boarding creates patient safety issues, increases risk of mortality. Hospital Case Management, 21(3), 29.

    The article discusses how keeping patients on stretchers in the ED due to unavailability of inpatient beds creates patient safety issues and exceeds the risk of mortality. Hospitals should analyze and find out the roadblocks to timely patient throughput, ensuring that patients are moved to the next level of care as soon as possible. It also suggests beginning discharge planning on day 1 and informing the patient and family of the anticipated discharge date. To avoid ED boarding, hospitals should have a well-established continuous process improvement plan. For example, hospitals to look at the following: bed utilization, length of stay, and when and how quickly patients are discharged and what drives the discharge process, implementation team to determine what is holding up discharge, determine how long it takes environmental services to clean vacant room, create a culture where the entire team can work together, make sure of constant communication between ED and the nursing staff, case managers, social workers and the charge nurse to triages patients meeting stability.

29. Innes, G., Sivilotti, M., Ovens, H., Chochinov, A., McLelland, K., Kimsing, C., Mackinnon, D., Chopra, A., Dukelow, A., Tyberg, J., Horak, S., Barclay, N., Kalla, D., Ross, T., and Kwok, E. (2017, Manuscript Submitted for Publication). How big is Access Block Relative to Hospital Capacity in Canadian Emergency Departments?

    The authors describe ED crowding as access block and determine its main cause is hospital block – the prolong boarding of inpatients in EDs. The paper compared administrative data from urban EDs that summarized their CTAS 1-3 inflow, mean delay to care space, and the proportion triaged to traditional nurse-staffed stretchers versus a rapid assessment zone (RAZ) or novel intake area (INT). Data from 25 sites in 12 cities were included in the study. Results demonstrated that ED access gaps are large and jeopardize care for many high acuity patients. The gaps however are very small relative to hospital operating capacity. Study sites included hospitals in Vancouver, Surrey, Edmonton, Calgary, Leduc, St. Albert, Regina, Winnipeg, Toronto, Ottawa, and London.

30. Jarvis, P. (2016). Improving emergency department patient flow. Clinical and Experimental Emergency Medicine, 3(2), 63-68.

There is an association between increased ED mortality rates and ED crowding, which suggests crowding should be treated as a significant public health concern. ED crowding is influenced by internal and external factors within the hospital and in the community and as such should not be considered an ED problem. Strategies to reduce the amount of time patients spend in the ED include: doctor triage- reducing admissions and improving the time to key decision making; Rapid Assessment Models-early assessment and investigation coupled with prompt initiation of treatment reduces amount of waiting time that occurs between each of these steps in the traditional model; streaming-ensures less urgent patients continue to be seen in a timely way but there needs to be physical space and appropriate staffing to meet the needs of each individual stream; co-locating primary care in the ED-some evidence that suggest more cost effective for GP to see patient less urgent clinical problems as they tend to order fewer tests and admissions; and Point of Care testing-when used effectively, POCT has been shown to reduce delays to the initiation of treatment, increase patient discharge rates and decrease total ED journey time.

31. Johnson, K., and Winkelman, C. (2011). The effect of emergency department crowding on patient outcomes: A literature review. Advanced Emergency Nursing Journal, 33(1), 39-54.

    The purpose of this review was to summarize the findings of published reports that investigated quality-related outcomes and emergency department (ED) crowding. Of 276 data-based articles, 23 reported associations between patient outcomes and crowding. These articles were grouped into 3 categories: delay in treatment, decreased satisfaction, and increased mortality. Although these studies suggest that crowding results in poor outcomes, it is possible other factors contribute to these adverse outcomes, such as: fewer hospitals nationwide, nursing staff shortages, decreased inpatient beds, increased patient volume, increased acuity of patients entering the ED, and the increased in number of patients boarded in the ED. The study concludes that effective strategies for the optimization of patient outcomes focus on the processes that will contribute to maintaining high-quality care even during times of crowding.

32. Khalifa, M., and Zabani, I. (2016). Reducing emergency department crowding: evidence based strategies. Studies in Health Technology & Informatics, 226, 67-70.

    This paper was a literature review and qualitative study on suggestions to reduce ED crowding by emergency and healthcare management professionals. The authors reviewed 58 published studies and conducted 20 qualitative surveys – 18 with ED physicians. The research revealed 10 specific procedures to reduce ED crowding divided into three categories: physical improvements, technology improvements, and process improvements. Physical improvements included: installing physician cubicles for fast assessment and discharge, creating a triage pod area using room dividers, and creating an internal waiting room for least acute patients to remain vertical instead of occupying bed space. LWBS rates, ED crowding overall and patient length of stay were all thought to decrease with the implementation of physical changes. Technology improvements included: electronic health records to automatically update triage record. Process improvements included: implementing a scribe program and front end physician to triage patients. Physician triage at the front end of the ED was the procedure most frequently implemented.

33. Khanna, S., Boyle, J., Good, N., and Lind, J. (2012). Unravelling relationships: Hospital occupancy levels, discharge timing and emergency department access block. Emergency Medicine Australasia, 24, 510–517.

Paper was a retrospective analysis of inpatient and ED data from 23 reporting public hospitals in Queensland, Australia during a 30 month period from 2007-2010. The study identified three stages of system performance decline, or choke points, as hospital occupancy increased (i.e.: 91%, 96%, 99%). The choke points were dependent on the size of the hospital and reflected a system change perspective to ED crowding from seeing it as 'business-as-usual' to 'crisis'. The early discharge of patients was also found to significantly impact crowding levels and improve patient flow. Hospitals worldwide target 85% occupancy rate however, several researchers argue this is measure is too general and doesn't fit all centres. The authors argue precise targets which better reflect a hospital's capacity are necessary to ensure optimal patient flow. The results of the study indicate modern hospital systems are more robust and are able to operate at an optimal level up to the 90th percentile. Determining choke points that affect the hospital's system performance and designing strategies around these points can help hospitals improve their current capacity management protocols. The study validates the argument that the commonly suggested 85% occupancy level target is not an optimal one-size-fits-all measure.

34. Kiessling, P. and Shaw, J. (2010). Flow strategies cover processes in and out of ED. Emergency Department Management, 22(1), 3-5.

    The journal article articulates the success of the 'door to doc' strategy implemented at the Cincinnati Children's Hospital Medical Centre. Under the hospital's previous system, patients arriving to the ED were reviewed by clerical staff. With the new initiative patients are now seen by a nurse immediately upon arrival for a brief initial exam to determine the level of care they require. If they need immediate care they are moved directly to the appropriate area (i.e.: resuscitation), if not they proceed to a more complete triage process. According to the article, the hospital staff noted that these changes have ensured a safe flow as well as a smoother flow, although, data on door-to-doc times and length of stay still are being formalized. The success of this quality improvement process is due to the following factors: significant support from leadership, patient escort staff recruited to move the patient from the ED to the floor, predicting admits, discharges vital, communication regarding the predicted discharge date and time is critical, math formula was developed that allowed the ED to predict its admissions and standardized hand-off process.

35. Klein, M., and Reinhardt, G. (2012). Emergency department patient flow simulations using spreadsheets. Journal of the Society for Simulation in Healthcare, 7(1), 40-47.

    ED services are critical and in high public demand. Patient flow computer simulations can be used to assess an EDs operations, develop utilization and performance measures and provide estimates for budgeting and planning. This type of model however is only a theoretical tool – its performance and accuracy is dependent on the quality of its programming. Platforms that currently exist on the market are costly and require a large investment of resources into the modeling, coding and analytics. Using a common and easy to use program like Microsoft Excel can be just as effective at conducting effective simulations. The research demonstrated using Excel for these spreadsheet simulations was as effective as computer simulations but easier to use, understand and implement. Spreadsheets were shown to be effective in organizing existing datasets which eliminates the need to copy data by hand, and output analyses were easy to customize based on variables and scales being used (i.e.: Emergency Severity Index or Canadian Triage and Acuity Scale) into charts, diagrams, etc. to fit the users' needs.

36. Martin, M., Champion, R., Kinsman, L., Masman, K. (2011). Mapping patient flow in a regional Australian emergency department: A model driven approach. International Emergency Nursing, 19(2), 75-85.

Unified Modelling Language (UML) models of the patient journey in a regional Australian emergency department (ED) were used to identify bottle-necks that contribute to over-crowding. The objective of the study was to understand factors that delayed a patient's journey and provide an evidence base for service planning options within the primary hospital of study. The study used a mixed methods approach with four major activities to design their model of the patient mapping journey. Quantitative data was collected from EDs and combined with qualitative information and modelling. Qualitative data was acquired via focus group sessions. The greatest source of delay in patient flow was the waiting time from a bed request to exit from the ED for hospital admission. It represented 61% of the time that these patients occupied ED cubicles. The physical layout of the triage area was also identified as counterproductive to efficient triaging. The resulting UML diagram mapped the entire patient journey through the ED for admitted patients and patients who were discharged. A key difference between this and other published studies using UML was that the patient mapping data in this project was recorded manually by research assistance rather than gleaned from hospital info systems.

37. Mason, S., Knowles, E., and Boyle, A. (2016). Exit block in emergency departments: a rapid evidence review. Journal of Emergency Medicine, 34(1), 46-51.

Exit block (or access block) occurs when ED patients require inpatient care but are unable to access a hospital bed within a reasonable timeframe. Exit block has been recognized as a major contributor to ED crowding. Research from Australia estimates one-third of patients experience exit block. Higher levels of block were more likely to occur in larger hospitals, urban centres and non-pediatric hospitals. High levels of bed occupancy appear to be associated with a greater degree of exit block. The effects of exit block identified in the literature review included: contribution to waiting time, increased boarding, decreased patient outcomes (including surgery delays, longer post-operative LOS, and a detrimental effect of emergency mental health care needs), negative impact on workforce (in which reducing access block would improve the attractiveness of emergency medicine as a career). Possible solutions to exit block include: increasing hospital resources (nurses and registrars), increasing the number of beds in the hospital, considering patient preferences (patients tended to prefer waiting in ward corridors versus ED corridors), and redesigning emergency and urgent care systems to improve organizational flow. There was no strong evidence in support of individual initiatives to alleviate exit block. Solutions to exit block in the ED may cause adverse pressures elsewhere in the hospital system.

38. Suzanne Mason, Ellen J. Weber, Joanne Coster, Jennifer Freeman, Thomas Locker (2012). Time Patients Spend in the Emergency Department: England's 4-Hour Rule—A Case of Hitting the Target but Missing the Point? Annals of Emergency Medicine, Vol 59, no. 5.

To address concerns about prolonged emergency department (ED) stays from crowding, England mandated that the maximum length of ED stay for 98% of patients be no greater than 4 hours. Authors evaluate the effect of the mandated ED care intervals in England. The introduction of a time target reduced the proportion of patients staying greater than 4 hours. More patients departed within 20 minutes of the target 4-hour interval after the mandate, notably, the elderly.

39. McClelland, M., Lazar, D., Sears, V., Wilson, M., Siegel, B., and Pines, J. (2011). The past, present, and future of urgent matters: lessons learned from a decade of emergency department flow improvement. Academic Emergency Medicine, 18(12), 1392-1399.

EDs face major challenges due to increased crowding and a greater public focus on quality measurement and improvement. To reduce crowding, some EDs have moved away from the traditional linear processing model of ED flow to a more parallel process where patients are seen by a provider soon after arrival and lab orders, workups and imaging are simultaneously processed. This is known as physician-directed queuing, team triage or rapid entry and accelerated care at triage (REACT). The Urgent Matters program, funded in 2002 by a private foundation was created to improve quality and enhance flow in the ED. It has worked with hospitals throughout the US and created various tools to facilitate best practices and knowledge including e-newsletters, a webinar learning series, national conferences, and participated in the creation of a standardized set of ED performance measures for industry-wide benchmarking of ED operations and improved public reporting. Seven success factors to improve patient flow and quality improvement: 1) recognize ED crowding is a hospital-wide problem, not an ED problem, 2) make transparency an organizational value, 3) build multidisciplinary hospital-wide teams to drive quality improvement, 4) guarantee top management's support, 5) recruit a 'champion', 6) use formal improvement methods, 7) commit to rigorous metrics. Collaboration with faculty from the Wharton School of Business developed a conceptual model of crowding. The tool will aid hospitals accurately measure the effects of improvement strategies.

40. McHugh, M.; Van Dyke, M.J.; Howell, E. et al. (2013). Changes in patient flow among five hospitals participating in a learning collaborative. Journal for Healthcare Quality, 35(1), 21-30.

The purpose of this investigation was to evaluate the efforts of six hospitals who participated in a collaborative aimed at improving patient flow and reducing ED crowding. The six hospitals in the learning network formed a patient flow improvement team: a nurse, physician, additional ED representative, senior hospital leader, research analyst, and other relevant staff (i.e.: ancillary services). Each team selected at least one patient flow improvement strategy. In total, seven strategies where implemented. During the 18-month collaborative, all the hospitals encountered challenges as they implemented strategies to improve patient flow and reduce ED crowding. By the end, four hospitals had fully implemented improvement strategies, and had experienced modest improvements in ED LOS or LWBS. While the effectiveness of the strategies on ED LOS and LWBS rates at each hospital yielded mixed results, the network partners learned from each other and had a better understanding of the challenges and effectiveness of each of the strategies on patient flow. The findings highlight how a mixed-methods approach can benefit evaluations of patient flow improvement efforts.

41. Ming, T., Lai, A., and Lau, P. (2016). Can team triage improve patient flow in the emergency department? A systematic review and meta-analysis. Advanced Emergency Nursing Journal, 38(3), 233-250.

The paper focuses on the use of a triage team to relieve the work of the triage nurse and determine if a modification in the triage system can mitigate ED crowding. A triage team in theory can promote cooperation of health care workers and relieve the highly stressful workload of the triage nurse. The inclusion of a physician to an ED triage team may also help alleviate ED crowding due to faster triage abilities. Based on the limited data the use of a triage team decreased wait times, however there was no significant reduction in LOS for patients in all urgency categories. Mortality and LWBS rates also did not

show a significant difference with the triage team model. The evidence in this study overall does not favour team triage over single-nurse triaging for the purpose of reducing ED crowding.

42. Mumma BE, McCue JY, Li C, Holmes JF. Effects of emergency department expansion on emergency department patient flow. Acad Emerg Med 2014:21:504-9.

    This study used administrative data to look at the periods before and after the expansion of an urban academic emergency department. Despite adding 20 adult beds to the existing 33 beds, the left without being treated rate did not improve yet the number of boarding hours increased, showing a worsening of emergency department crowding with the ED expansion.

43. Paul, J., and Lin, L. (2012). Models for improving patient throughput and waiting at hospital emergency departments. Journal of Emergency Medicine, 43(6), 1119-26.

    Crowding in ED diminishes the ability of staff to provide immediate access to patients and stabilize those with an emergent medical condition. Inability to transfer admitted patients into inpatient beds has been reported as the most serious cause of ED crowding. With numerous strategies having varying amount of success in US hospitals the problem continues. The authors argue this may be explained by the lack of a generic model that would be useful for all EDs to follow. Discrete Event Simulation (DES) is a branch of computer simulation science that is an effective tool for studying complex systems. DES models have been developed for use at several hospitals to evaluate performance and other throughput processes. DES models are developed in three steps: 1) gathering operational data, 2) developing the model, and 3) testing the model. Results showed the development and implementation of a generic DES model was able to identify the key areas of improvement internal to the ED and to propose new projects in areas external to the ED. The model could be adapted for use in other EDs with varying results.

44. Pines, J., and McCarthy, L. (2011). Executive summary: interventions to improve quality in the crowded emergency department. Academic Emergency Medicine, 18(12), 1229-1233.

    The goal of the conference was to: 1) identify promising interventions to safeguard the quality of emergency care during crowded periods and 2) reduce ED crowding and improve the quality of emergency care through system-wide solutions and policy interventions. The conference reviewed literature on interventions to reduce crowding, summarized evidence of their effectiveness, identified strategies within/outside the health care setting that may help reduce crowding or improve the quality of emergency care provided during episodes of ED crowding, and identified appropriate design and analytic techniques for rigorously evaluating ED interventions. The literature review was a search of medical literature in Pubmed/ MEDLINE to identify articles published on-line between January 1, 2003 to January 1, 2013 related to the concepts of ''emergency department'' and ''crowding'' or ''crowding''. The literature suggests the effects of ED crowding on patient outcomes are: delays in treatment interventions, increased medical errors or adverse events and increased mortality. While the main factors that may cause crowding are: inadequate staffing, hospital bed shortages and that ED Crowding results in poor performance on wait time and length of stay.

45. Pines, J., Pilgrim, R., Schneider, S., Siegel, B., and Viccellio, P. (2011). Practical implications of implementing emergency department crowding interventions: summary of a moderated panel. Academic Emergency Medicine, 18(12), 1278-1282.

The article summarizes the opinions of four medical doctors who spoke on a panel at a 2011 conference on ED crowding. The paper points to evidence that ED crowding is worsening, increasing, and suffering from lengthening wait times and hospital closures. The human toll of ED crowding is also well-documented and points to high levels of crowding equalling poorer qualities of care and outcomes. The panel discussed the Urgent Matters program, a research and best practice program related to ED crowding and quality improvement has focused on two multihospital collaboratives. Funded since 2002, the program has shown focusing on throughput and output – not simply input and demand – allows hospitals to make improvements in flow despite continued external community pressures such as increased use of EDs in absence of alternatives. Comments focused on ED boarding, reasons for increased ED usage, the need for solutions that: 1) improve flow through reorganization, implementing Lean and eliminating bottlenecks, 2) smoothing the surgical schedule to free up the need for inpatient beds, and 3) flattening the admission and discharge processes to admit and discharge patients as needed to free up beds. Practical and structural interventions were reviewed. From a practical perspective the role of effective leadership and management in crowding interventions is critical and is often overlooked as a relevant factor even though it can reduce the effectiveness of other well-designed interventions. It was also noted there was a limited amount of data available and publications were bias towards printing positive results.

46. Richardson, D., and Mountain, D. (2009). Myths versus facts in emergency department crowding and hospital access block. MJA, 190(7), 369-374.

    This paper identifies 7 major myths about ED crowding: 1) general practice patients (non-emergency patients) are the cause of crowding, 2) crowding is caused by too many patients attending the ED, 3) ED patients now spend excessive time in the ED because staff take too long to investigate and treat them, 4) crowding can be solved with bigger EDs, 5) telephone advice lines and collocated GPs will reduce ED attendance, 6) the causes of ED crowding lie within the ED, and 7) patient outcomes are not influenced by crowding. The authors concluded the fundamental issue of ED crowding is the availability of inpatient beds. Public leaders need to admit that ED crowding has adverse effects on patient care.

47. Rooney, K., and Schilling, U. (2014). Point-of-care testing in the overcrowded emergency department – can it make a difference? Critical Care, 18(6), 692-698.

    Point-of-care testing (POCT) provides physicians with rapid results for many of the commonly ordered tests. Using POCT in an ED setting may increase timely discharge rates, shorten LOS, and increase patient throughput. POCT refers to any diagnostic test administered outside the central laboratory near/at the same location as the patient. With advances in technology, many clinical investigations can now be performed outside of the lab to a high degree of accuracy. POCT devices are portable and can perform and analyze results significantly faster than sending test out to the central laboratory. This can decrease delays in treatment, increase ED efficiently, and alleviate the negative effects of ED crowding. Studies have shown POCT results were available an average of 46 minutes earlier than from the central laboratory. POCT can increase the speed of diagnosis for acute coronary syndrome, increased speed of diagnosis and LOS in ED for venous thromboembolic disease, increased speed of diagnosis of sepsis, and reduce stroke treatment time by 30-50 minutes. When used effectively POCT has reduced delays to treatment for the critically ill, improved outcomes, increased timely patient discharge rates and decreased LOS. While costs are elevated this is outweighed by the gain of patient flow. POCT technology advances for complete blood

count, pregnancy testing, infectious disease testing and cancer screening is expected to change the way emergency medicine is practiced.

48. Santos, E., Cardosa, D., Queiros, P., Cunha, M., Rodrigues, M., and Apostolo, J. (2016). The effects of emergency department crowding on admitted patient outcomes: A systematic review protocol. JBI Database of Systematic Reviews and Implementation Reports, 14(5), 96 – 102.

    The purpose of this review was to identify the effects of emergency departments crowding on admitted patient outcomes. While this study is yet to be completed a preliminary literature review strongly suggests that ED crowding is not just an ED problem as it can evolve into a public health crisis and create serious public safety issue. Therefore, adequate resources should be assigned purposefully to ameliorate this issue. The review indicates that ED crowding is the product of several factors: decrease in hospital capacity, increase in closures of a significant number of EDs, an increase in ED patient volumes, a shortage of nursing staff, increase in the complexity of patient management, the inability to transfer patients from the ED to inpatient units. The review further indicates that crowding can lead to patient unwanted outcomes while waiting for care in the following ways: increased medical errors, increased morbidity and mortality, prolonged length-of-stay, delay in door-to-needle time to treatment, reduced patient and staff satisfaction, and overall inferior health care.

49. Sayah, A., Lai-Becker, M., Kingsley-Rocker, L., Scott-Long, T., O'Connor, K., and Lobon, L. (2016). Emergency department expansion versus patient flow improvement: impact on patient experience of care. Journal of Emergency Medicine, 50(2), 339-348.

    Strategies to improve the experiences of patients and ease ED crowding generally require additional space, personnel resources and/or major process improvement interventions. This paper compares the impact of ED expansion with patient flow improvements and the establishment of a rapid assessment unit (RAU) in a medium sized ED in the US. ED congestion is caused by disruptions in the three steps of patient flow: input (i.e.: ambulance diversion), throughput (i.e.: rapid assessment zones), and output (i.e.: full capacity protocols). A review of the literature shows many interventions for ED crowding have been designed to alleviate crowding at each of these three steps. Renovation and expansion of the physical ED allowed for additional beds and treatment space, however this did not improve ED throughput in this case study. The expansion resulted in some operational improvements, however volume then increased and the staff continued to follow the same flow approach. The immediate bedding process at the same time resulted in minimized patient moves and handoffs, less miscommunication and a decreased LOS. The data in this study clearly shows that process and flow improvements positively impact the patient experience to a greater degree that renovations and expansion to the physical ED.

50. Schull, M., Bell, R., Salkeld, E., and Rotteau, L. (2012). Ontario's Emergency Department Process Improvement Program (ED-PIP): A Qualitative Evaluation. Toronto: Institute for Clinical Evaluative Sciences.

    In 2008, the Ministry of Health and Long-Term Care introduced its ER Wait Time Strategy to reduce ED LOS and reduce crowding. A key part of the strategy was the Emergency Department Process Improvement Program (ED PIP) – a 7-8 month Lean management program to support ED and hospital improvements in patient flow. This report summarizes a qualitative evaluation based on interviews with teams at 10 purposively selected hospitals chosen based on improvements and those that did not improve

following the ED PIP. Eight themes were identified in the data that resulted in 10 recommendations: 1) ensure strong senior admin/CEO support, 2) prepare better for an ED PIP type intervention, 3) careful and early selection of team members is essential, 4) develop a thorough and shared understanding of the role of external consultants, 5) brand the intervention carefully, 6) invest in capacity for performance measurement, 7) work long term not short term (it's a marathon, not a sprint), 8) communicate frequently, 9) ensure effective physician leadership, 10) develop a plan for sustainability early. The most significant difference between hospitals that saw reduction in ED LOS and those that did not was the extent of executive support – specifically the CEO.

51. Sills, M., Fairclough, D., Ranade, D., and Kahn, M. (2011). Emergency department crowding is associated with decreased quality of care for children with acute asthma. Annals of Emergency Medicine, 57(3), 191-200.

    The paper was a cross-sectional study of 927 patients aged 2-21 treated for acute asthma over one year at a children's hospital ED. The goal of the study was to measure the association between quality of care for asthma patients and ED crowding. Using electronic medical records ED crowding indicators – ED occupancy and number of patients waiting to consult with a provider – were measured at each patient's arrival. The study found both timeliness and effectiveness of care were inversely associated with crowding.

52. Silvester, K., Harriman, P., Walley, P., and Burley, G. (2013). Does process flow make a difference to mortality and cost? An observational study. International Journal of Health Care Quality Assurance, 27(7), 616-632.

    Using a variety of quantitative tools, the authors investigate the relationship between patient flow, mortality and healthcare costs. The paper reviews an observational study in one NHS trust (2 hospitals) and shows a strong association between times of increased system crowding and patient mortality. Costs also increased. They make the point that the crowding episodes had more to do with system problems (holiday closures of care home intake, reduced hospital staffing, closed ORs) than patient or emergency factors. The study further found that delays in the system such as reduced outflow creates work backlogs that then gradually fill existing acute beds, emergency care and medical/surgical assessment unit buffer areas. These delays compromise patient safety because newly admitted patients are not placed or monitored properly. It is suggested there is a causal link between poor treatment upon arrival at secondary care and death rate of patients.

53. Singer, A., Thode, H., Viccellio, P., and Pines, J. (2011). The association between length of emergency department boarding and mortality. Academic Emergency Medicine, 18(12), 1324-1329.
    ED crowding is caused by the periodic mismatches in demand for care and supply of resources in the ED such as staffing and bed space. As one of the most important issues currently facing US hospitals, the Institute of Medicine describes ED crowding as a public health crisis. ED crowding results in long wait times for patients, high rates of LWBS, long LOS, and long wait times for an inpatient bed (boarding). This study evaluated the association between ED boarding and patient outcomes in an academic, suburban setting. It was presumed longer ED boarding times would be associated with hospital mortality and LOS. Using an electronic medical record (EMR) system, patient demographics and clinical data were extracted for each patient. Data on boarded patients in the ED were compared across time intervals (i.e.: 2-5 hours, 12-24 hours, etc). Measures of comorbidity were used to adjust for differences between cases. Results

suggested prolonged ED boarding is associated with worse patient outcomes such as hospital LOS and mortality. Potential explanations include: 1) the direct causal relationship between boarding and patient outcomes is due to the increased burden on ED staff, and 2) low risk patients boarding in hospital hallways allow high-risk patients to stay in the ED longer which increases hospital mortality and LOS due to the increase in injury or illness severity reported.

54. Stang, A., Crotts, J., Johnson, D., Hartling, L. and Guttmann, A. (2015). Crowding Measures Associated With the Quality of Emergency Department Care: A Systematic Review, Academic Emergency Medicine, 22(6), 643-56.

    The objective of this systematic review was to identify existing measures of ED crowding that have been linked to quality of care as defined by the Institute of Medicine (IOM) quality domains (safe, effective, patient-centered, efficient, timely, and equitable). Overall, 15 of the crowding measures studied had quantifiable links to quality of care. The three measures most frequently linked to quality of care were the number of patients in the waiting room, ED occupancy (percentage of overall ED beds filled), and the number of admitted patients in the ED awaiting inpatient beds. None of the articles provided data on the link between crowding measures and the IOM domains reflecting equitable and efficient care.

55. Staib et al. (2015). Report on the 4-h rule and National Emergency Access Target (NEAT) in Australia: time to review. Australian Health Review, www.publish.csiro.au/journals/ahr.

    The aim of the study was to provide a summary of a systematic review of literature reporting benefits and limitations of implementing National Emergency Access Target (NEAT), a target stipulating that a certain proportion of patients presenting to hospital emergency departments are admitted or discharged within 4 h of presentation. Benefits of a time-based target for emergency care are improved timeliness of emergency care and reduced in-hospital mortality for emergency admissions to hospital. Limitations centre on using a process measure (time) alone devoid of any monitoring of patient outcomes, the threshold nature of a time target and the fact that currently NEAT combines the measurement of clinical management of two very different patient cohorts seeking emergency care: less acute patients discharged home and more acute patients admitted to hospital. Time-based access targets for emergency presentations are associated with significant improvements
    in in-hospital mortality for emergency admissions. However, other patient-important outcomes are deserving of attention, choice of targets needs to be validated by empirical evidence of patient benefit and single targets need to be partitioned into separate targets pertaining to admitted and discharged patients.

56. Van Dyke, K., McHugh, M., Yonek, J., and Moss, D. (2011). Facilitators and barriers to the implementation of patient flow improvement strategies. Quality Management in Health Care, 20(3), 223-233.

    The purpose of this effort is to identify and describe the facilitators and barriers encountered by 6 hospitals in the United States that implemented strategies to improve patient flow and reduce ED crowding. The hospitals selected strategies to improve patient flow that could be implemented within 3 months with measurable impact. Several facilitators and barriers were common to the implementation of different strategies across the 6 sites. Eight strategies were implemented in the facilities. This was followed by informant interviews analysed qualitatively using a grounded theory approach. Factors facilitating implementation included participation in education sessions and strategic selection of team

members. Generally, staff involvement, leadership support and commitment, and capable reporting/information systems facilitate implementation Common challenges included staff resistance and entrenched organizational culture and lack of resources.

57. Vermeulen, M., Stukel, T., Guttmann, A., Rowe, B., Zwarenstein, M., Golden, B., and Nigam, A. (2014). Evaluation of an emergency department lean process improvement program to reduce length of stay. Annals of Emergency Medicine, 64(5), 427-438.

    Crowding and delays in the ED are associated with a greater risk of adverse outcomes for patients – increasing mortality rates among admitted patients and increasing death rates among discharged patients. In 2006, a report commissioned by the Government of Ontario proposed numerous strategies to reduce ED crowding, in 2007 the Ontario government announced plans to address the province's high ED wait times, and in 2008 Ontario's Emergency Department Wait Time Strategy was announced. This study reviewed 89 of the 162 EDs in Ontario eligible for the process improvement program. The program provided one external lean coach to train and mentor improvement teams at each hospital, on-site support from lean management experts, training in the program methodology, tools for implementation, and linkages for peer-to-peer mentoring, forums and teaching. Results revealed improvements in overall LOS, time to initial physician assessment, and the percentage of patients meeting waiting time targets. The study however highlighted the challenges in evaluating interventions in settings where multiple approaches are being used simultaneously. While some of the lean processes resulted in reducing ED waiting times, these results were modest as other simultaneous process initiatives were already in place including public reporting, pay-for-performance initiatives and an increasing awareness of the need to improve patient flow in hospitals. Further evaluation on the effectiveness of lean methods in the ED should take place before widespread implementation.

58. Vose, C., Reichard, C., Pool, S., Snyder, M., and Burmeister, D. (2014). Using LEAN to improve a segment of emergency department flow. Journal of Nursing Administration, 44(11), 558-563.

    The American College of Emergency Physicians describes ED crowding as the state where the available institutional resources are insufficient to meet the basic needs of emergency patients. ED crowding is a symptom of hospital capacity and process flow opportunities. Toyota LEAN methods can be used to address ED crowding. Based on a conceptual model on input-throughput-output, the model used helps to explain the complexity of the system by organizing patient flow into compartmentalized portions. Input addresses the portion of the ED cycle from patient arrival to decision to admit. Throughput is the time from decision to admit to the time an admission order is written. Output is the time between the admission order and the arrival of the patient on the inpatient ward. The LEAN initiative focused on output due to frustration of patients and staff regarding the delays in process flow. The goal of the project was to reduce this process to less than 50 minutes. LEAN processes adopted during the output stage of ED process showed a continuous decrease in ED admission hold for the medical surgical units. Patients experienced less time in transport to their inpatient bed than before the initiative. Medical-surgical nurses reported an improved sense of control over their workload as they were able to prioritize transfers and reduce the unproductive process of batching.

Emergency & Hospital Capacity Task Group

September 29, 2022

fraserhealth

Better health. Best in health care.

Structure – 7 “R”s

- Redistribute demand
- Redirection of Services
- Redesign Services
- Reduce LOS
- Redeployment
- Retraining
- Reduction of Services

Redistribute Demand

- Regional Access & Flow Governance
- Work as a Network of capacity
- Ensure HLOC preservation (tertiary sites – RCH, ARH, SMH)
- Early pulls from ER
- Over capacity protocols, accountability documents

Redirection of Services

- Focus on ALC strategies
  - Difficult/Complex Care housing (exploring)
  - Purchase of additional private pay LTC beds (in process)
  - Fraser Health Virtual Call Line (alternatives to ER, 811)

Redesign Services

- Augmenting 24 hour HS (exploring)
- Virtual Psych Unit (VPU)
- Partnership with UPCC (example ERH ER & Tri-cities UPCC)

Reduce LOS

- VPU (Earlier discharge from acute)
- FH Virtual Care Line (clinical assessment, advice, triage, post discharge follow up – early supported discharge)
- Fab 5 discharge practices (EDD, whiteboards, structured rounds, 48/6, mobility plan)
- Bedside rounds in ER (start ARH)

Redeployment

- Redeployment within site, within region, outside programs
- Critical staffing algorithms

Retraining/alternate care models

- Expand the Health Career Access Program (HCAP) to acute settings, beginning with the ER
- Dedicated hiring Manager ER
- Maximize LPNs in ER
- In house ER training & career laddering

Fall/Winter Surge Plans

- Following Ministry of Health Five stages of “surge” template
- Currently Fraser Health is in stage 1 (228 beds over baseline funded) or 6% over baseline
- **Stage 1** staffing includes utilization of casual, relief, agency, some daily redeployments within acute care sites & purchase of additional LTC beds
- **Stage 2** and beyond includes the redeployment of nursing and allied staff from other areas within the organization to staff medical/surgical capacity, as well as redesign of bed maps, maximize overnight HS care & additional sub acute beds at Fellburn.
- **Stage 3/4** and beyond will include reduction in service delivery as last resort (surgery, clinics, etc).
- **Stage 5** relies on the utilization of New Vista LTC ahead of renovation completion, and will require significant redeployment of care team staff, and service reduction.
- Redeployment of staff across service/program priorities **will need to be managed on a daily basis** to ensure system functioning & capacity (ER, ICU, Med/Surg, vaccines, etc.).
- **Reductions to services & Operating room reductions will be last resort.**

COVID-19 Rapid Learning Review:

Final Report by the Emergency Services Advisory Committee

December 2020

This report is confidential and intended for internal use of the Ministry of Health and Health Authorities of BC

Contents

Acknowledgements

This COVID-19 Rapid Learning Review was undertaken by the Emergency Services Advisory Committee in collaboration with the BC Ministry of Health and Reos Partners, and with the support of select additional contributors.

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Executive Summary

The Emergency Services Advisory Committee (ESAC) brings together clinical leaders and operational leaders for emergency services from each health authority, as well as representatives from BCEHS, Doctors of BC, UBC, CIHI, the Ministry of Health, and patient partners, to provide expert advice and guidance to the Ministry of Health on a variety of topics related to emergency care delivery.

The rapid onset of the COVID-19 pandemic in March 2020 brought significant changes in how the emergency system of care operated. To capture the lessons learned from the pandemic and identify opportunities to build back better, both for the second wave of COVID-19 as well as for the long term, ESAC conducted a Rapid Learning Review (RLR) between June and September 2020. Using a mixed-methods approach including surveys, facilitated virtual sessions, and small group codification calls, the RLR identified and codified nine priority initiatives (p. 10-33) that have been implemented, expanded or improved during the pandemic and which ESAC membership believes should be introduced or maintained in all health authorities going forward:

- Optimized Appropriate ED Access
- Optimized ED Flow Strategies
- Increased Integration with UPCCs and Community Settings
- Improved Capacity Within and Outside EDs
- Peer-to-Peer Emergency Virtual Real-Time Support
- Clinician to Patient Emergency Virtual Real-Time Support
- Increased Understanding of How to Use PPE
- Adequate Negative Pressure Rooms and Negative Airflow to Meet Unexpected Pandemic Needs
- Improved Communication Between Operational Leadership and Emergency Care Providers

The RLR also informed eleven specific ESAC recommendations to health authorities and the Ministry of Health stemming from these priority initiatives and lessons learned (p. 8-10).

In addition to the priority initiatives, over thirty other promising initiatives were also identified (p. 35-40). Though not codified to the same level of detail as the nine priority initiatives, these have been captured in an inventory which can serve as a resource for information sharing across all health authorities, providing those that have not implemented these initiatives a snapshot of what has worked well elsewhere and promoting shared learning.

This report is grounded in the WHO Pentagram of partnerships necessary to formulate the best policy and on the over-riding concepts of a true, effective Health Learning System.

Introduction

The emergence of a novel coronavirus and the disease it causes, COVID-19, has created a significant challenge for health systems around the world. The World Health Organization (WHO) classified COVID-19 as a pandemic on March 11, 2020, and on March 17th a public health emergency was declared in British Columbia. Soon after most service and retail businesses were ordered closed.

As COVID-19 became more prevalent in BC, the health system responded by making preparations for a surge in infected patients. This included taking action to significantly reduce hospital occupancy, resulting in lower levels of hospital congestion and thereby removing one of the drivers of emergency department (ED) crowding.

While some of the initial actions taken in response to COVID-19, such as the temporary cancellation of elective surgeries, are not sustainable in the long term, many of the other initiatives undertaken would be beneficial both in preparing for the second wave of COVID-19 and as permanent changes to be incorporated into how EDs operate in the post-COVID environment.

Background to this Report

The role of the Emergency Services Advisory Committee (ESAC) is to provide expert advice and guidance in strategic alignment with Ministry of Health priorities and to act as a community for sharing best practices. Using a patient-centered approach, the committee provides advice and recommendations to, and receives strategic direction from, the Ministry of Health, to improve emergency care in accordance with the dimensions of quality.

In 2018, ESAC presented a report on emergency department crowding to the Standing Committee on Health Services and Population Health that plotted a course of action for addressing the issue of ED crowding in BC. It characterized the nature, extent and negative patient impact of ED congestion. This report identified hospital crowding as a major component of ED congestion and highlighted the need for efficient flow between patients coming in and out of the ED. As noted in the ED Crowding Report:

> *For an ED to operate efficiently and effectively there must be a relative state of equilibrium between the number of patients exiting and entering the ED. Disruptions to this delicate balance can create bottlenecks in the system that raise the level of crowding. For example, if hospital inpatient length of stay increases due to a lack of services in the community or insufficient post-acute care capacity, then hospital occupancy rises, and newly admitted patients remain in the ED while they await an inpatient bed. The result of this situation is that the functional capacity of the ED shrinks (these newly admitted patients now occupy ED stretchers), and the ED now has to care for any incoming and existing patients in a much smaller footprint, which results in crowding. The primary reason this equilibrium is disrupted is an increase in hospital crowding due to high occupancy levels.*

The unprecedented events following the outbreak of COVID-19 have created a very different environment for EDs. The significant drop in hospital occupancy during the early stages of the pandemic

showed how emergency departments would function when hospital occupancy levels were well below levels that would impede the flow of patients from EDs, while also dramatically increasing the existing challenges related to infection prevention and disease control.[1] Clinicians who contributed input to this report noted that, during the lockdown and resulting in emptying of hospitals, most health care providers felt they were providing better care to individual patients compared to the pre-COVID era, and patients who were treated in an ED during that time also felt that they were being managed well. The pandemic required new ways of thinking and new ways of working and provided an opportunity to learn from the changes and initiatives introduced or expanded as a result of the pandemic.

From April 2nd to July 23rd, ESAC held biweekly COVID-19 teleconference calls to allow members to share knowledge and best practices across health authorities. To continue this collaborative learning and leverage the shared knowledge of ESAC, a Rapid Learning Review (RLR) was proposed to identify initiatives that would be of benefit during an anticipated second wave of COVID-19 and which would allow EDs to "build back better" in the long term, helping to make progress on issues such as ED crowding rather than returning to the pre-COVID status quo. The RLR was conducted between June and September 2020; this report represents the summary of this work.

Methodology

In planning, designing, and conducting the RLR, ESAC engaged the services of the Ministry's Health Innovation Hub and Reos Partners. The Health Innovation Hub works to enable the development of policy and creative solutions through collaboration and co-creation by providing centralized access to resources, services and training. Reos Partners is a consulting organization with over 20 years of experience in designing, facilitating, and guiding processes that enable teams of stakeholders to make progress on their challenges using a systemic, collaborative, and creative approach.

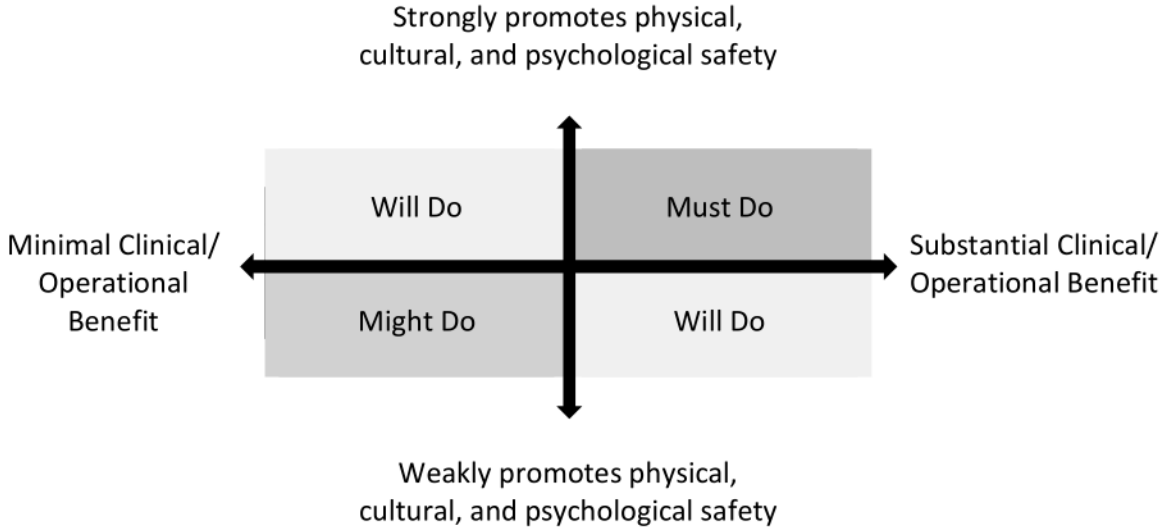
An RLR is quite similar to an After-Action Review, with the primary difference being that the RLR seeks to study processes and initiatives while they are still underway, rather than reviewing such work once it has concluded. The results of an RLR are documentation of systemic lessons, practical insights and actions to assist in the application of the next steps and to guide the path forward. The COVID-19 RLR was focused particularly on identifying what initiatives were most beneficial during the first wave of COVID-19 and which would be helpful for a second wave to "build back better." The team employed a mixed-methods approach to identifying, capturing and distilling promising initiatives from the ESAC, including:

- **Group Surveys:** ESAC members were asked to identify promising new approaches and interesting lessons learned within the health system since the start of the COVID-19 pandemic.
- **Virtual Workshops:** The results of the group surveys were used to inform two virtual workshops. The first was aimed at creating a list of beneficial initiatives that had surfaced during the

[1] It should be noted that there are also separate bodies of work (outside of the scope of this report) being done across the health system regarding infection prevention and disease control, as well as work being done on the unintended consequences of actions taken in response to COVID-19.

pandemic and beginning the work of prioritizing them, while the second continued and completed the prioritization of these initiatives and began codifying the most important of them.

- **Inventory:** All of the initiatives identified were mapped against the BC Health Quality Matrix and captured in an inventory that notes which health authorities are currently using each one (and can serve as a resource for information sharing across health authorities).
- **Prioritization:** As part of the second virtual workshop, initiatives were prioritized to determine which were most important to focus on. Priority was determined concerning clinical benefits, operational benefits, physical safety, and cultural and psychological safety. A 2x2 priority matrix based on an IHI tool (Appendix C) that links psychological safety/empathy with more traditional measures of clinical and operational benefit was used; a key difference was the incorporation of cultural safety into the tool as well.



- **Codification:** Nine initiatives were prioritized through the process described above. To codify these initiatives, one dedicated discussion session was set up for each individual initiative. These sessions were facilitated by Ministry of Health staff using a codification template. ESAC memebers and other BC healthcare providers were prompted to provide more granular details about the initiatives within each session.

The availability of information varied from initiative to initiative; available information was particularly limited in areas such as early data and evidence showing the impact of the initiative and estimates of the budget, staff time, equipment, etc. required to implement the initiative. However, a great deal of information was captured with regards to the details of how each initiative worked, what particular challenges it was addressing, lessons learned, and opportunities for improvement.

A more detailed accounting of the methodology, including the surveys used, the structure of the two virtual workshops, prioritization framework, and codification template are included in Appendix A.

Priority Initiatives and Recommendations

While initial identification yielded a wide variety of beneficial initiatives, which are highlighted in the Inventory of Promising Initiative section, the prioritization process identified the nine most important initiatives as:

- Optimized Appropriate ED Access
- Optimized ED Flow Strategies
- Increased Integration with UPCCs and Community Settings
- Improved Capacity Within and Outside EDs
- Peer-to-Peer Emergency Virtual Real-Time Support
- Clinician to Patient Emergency Virtual Real-Time Support
- Increased Understanding of How to Use PPE
- Adequate Negative Pressure Rooms and Negative Airflow to Meet Unexpected Pandemic Needs
- Improved Communication Between Operational Leadership and Emergency Care Providers

It should be noted that there is a great deal of overlap between many of these initiatives and/or their component parts. For example, avoiding unnecessary ED visits and hospital stays by enabling urgent follow-up at a UPCC is a component of both Optimized Appropriate ED Access and Optimized ED Flow Strategies, and is the focus of Integration with UPCCs and Community Settings. Many of the initiatives also work together or reinforce each other. As a result, while each priority initiative is described independently in the following sections of this report, many of the same themes are repeated across various initiatives.

The identification, prioritization, discussion and codification of these priority initiatives also yielded a series of recommendations from ESAC to health authorities and the Ministry of Health. In addition to the summary list below, these recommendations are included with the initiative from which they originated in the following sections.

ESAC Recommendations:

1. To ensure ED resources are focused on supporting patients who require emergent care, enable the use of:
    - Pre-screening prior to presentation to the ED
    - Virtual triage/navigation
    - Physician-mediated triage/navigation; or
    - Nurse triage with protocols to enable appropriate redirection of patients

2. To facilitate faster processing and discharge of patients who do not require emergent care, consider implementing a process for documentation of physician conversations with patients without requiring a full triage registration process.

3. To reduce ED crowding and maintain the balance between ED input and output, facilitate:

- Urgent follow-up, via UPCCs/hospital clinics/community clinics, to reduce the need for acute care bed utilization.
- Appropriate staffing, through expansion or reallocation of staff when required, to speed up the processing of patients through the ED and facilitate faster discharge or admission.
- Real-time reports to track hospital and community ALC numbers and bed capacity both in real-time and as trends, allowing for better planning and preparation for accelerated discharge of patients if required.

4. To reduce the use of EDs as the primary point of entry into the health system regardless of acuity, promote integration between EDs and UPCCs, where possible supported by:
    - Redirection of patients (both ways) between EDs and UPCCs based on predetermined criteria
    - Urgent follow-up capabilities
    - Standardizing services at UPCCs for ease of integration into a complex system.
    - Creating clearer pathways to quickly adjust human resourcing at UPCCs to keep up with changes in demand

5. To avoid default use of EDs for care of patients transported by ambulance, explore augmenting the paramedic scope of practice and developing pathways to allow BCEHS to transport patients to UPCCs when emergent care is not required.

6. To maintain appropriate infection prevention and control precautions in the context of limited physical space within EDs, especially during pandemic events, leverage the use of:
    - Virtual Waiting Room Apps
    - Handheld devices to direct patients
    - SMS updates for mobile devices
    - Indigenous Patient Liaisons/Navigators (available outside of standard 9:00-5:00 working hours)

7. Further support rural practitioners and patients by facilitating access to specialist support, thus improving care and at times reducing the need to transport, by supporting and seeking opportunities to expand peer-to-peer and caregiver to patient virtual real-time support pathways such as:
    - Rural Coordination Centre of BC Real-Time Virtual Support Pathways:
        - Rural Urgent Doctor in-aid (RUDi)
        - Rural Outreach Support (ROSe)
        - Child Health Advice in Real-Time Electronically (CHARLiE)
        - Maternity and Babies Advice Line (MaBAL)
    - BCEHS CliniCall system for peer-to-peer support

8. To provide patients with care in their home communities, mitigate limited primary care capacity and reduced physician access, and minimize risks associated with public fear of accessing EDs and hospitals during the pandemic, support and seek opportunities to expand:

- Virtual Physician Services via 8-1-1 / HealthLink BC Emergency iDoctor in-assistance (HEiDi)
- Culturally safe virtual services for Indigenous Peoples through the First Nations Virtual Doctor of the Day program and First Nations Virtual Substance Use and Psychiatry Service
- BCEHS Community Paramedicine virtual home visits

9. To avoid or reduce infectious disease transmission, particularly for patients with frailty and/or comorbidities, support appropriate PPE use through:
    - Robust and consistent supply chains
    - Consistent policies regarding the use and non-use of PPE
    - Quality improvement and education initiatives regarding the proper use of PPE

10. To reduce the risk of infectious disease transmission, maintain the ability to isolate the patient for their safety and the protection of staff by increasing the availability of negative pressure rooms or rooms with negative airflow where feasible.

11. To facilitate communication between executive decision-makers and clinicians and reduce decision-making silos, enable the use of:
    - Integrated EOC to provide a forum for communication between executive and clinicians
    - Cascading communications
    - Increased communications opportunities via team meetings, SBARs, etc.
    - Discussion groups through appropriate social media tools

Optimized Appropriate ED Access

Triage and access to urgent follow-up play a key role in ED access. Effective triage, particularly diverting patients who do not require emergent care away from an ED and towards alternative options, can help ease ED congestion while ensuring that patient care needs are met. This can be done in a number of ways, including virtual triage or diversion prior to patient presentation to an ED, having a physician involved in triage, or implementing protocols for triage nurses to assist with diversion away from EDs.

To avoid unnecessary presentations to the ED, new screening processes were put in place as a result of COVID-19, including more advanced screening through the HealthLink BC 8-1-1 line. Through the new HealthLink BC iDoctor-in-assistance (HEiDi) program, the nurses working on the 8-1-1 line now have real-time virtual access to full-service physicians who are able to assist them with more complex cases, including providing decision support as to whether the patient needs to visit an ED or can be treated in the community. Whereas previously many such complex cases may have been directed to an ED, this additional resource helps redirect patients for whom emergent care is not required. The HEiDi program is explored in greater detail in the Peer to Peer Virtual Real-Time Support section.

Virtual triage can also play a similar role in avoiding unnecessary presentations to EDs. Fraser Health has been piloting virtual triage through a new program launched in June. Originally called the Virtual Care Gateway and rebranded as Fraser Health Virtual Care (FHVC) as of September, it involves directing patients who have accessed any existing Fraser Health services to the Virtual Care Nurse, particularly after-hours and on weekends. The Virtual Care Nurses (RNs with emergency and primary care experience) complete an assessment and advise or connect callers with the service that best meets their needs. The service allows Fraser Health residents to access information and care via the right channels, and in the right locations, quickly and easily and in many cases from home. It is available seven days a week from 10 AM to 10 PM. FHVC helps direct and link callers to available health services including the integrated system of primary and community care. Individuals who might consider using the ED for non-emergency needs will be linked to a range of available urgent and primary care options.

OPTIMIZED APPROPRIATE ED ACCESS

Entrenched Problem or Challenge

- Triage Bottlenecks
- ED Overcrowding

Responding to the Challenge

- Pre-screening prior to presentation to the ED
- Virtual Triage/Navigation (nurse-led)
- Physician Mediated Triage/ Navigation
- Nurse Triage with protocols to enable appropriate redirection

For patients that do present to an ED, having a physician conduct triage provides the opportunity for speedy redirection of patients that do not require the level of care provided in an ED, as well as faster admission of inpatients who require hospitalization. However, this is also the most resource-intensive way to conduct triage, as physicians are the most expensive human resource to use for this purpose. Putting physicians at the triage desk may mean increased costs, especially when they are being used for the triage of non-urgent patients.

In the case of nurse triage and redirection of patients from the ED when they do not require emergent care, it is important to ensure that clear criteria are in place as to what types of patients and clinical conditions are appropriate for redirection. While physicians have legal protections through CMPA, nurses rely on the health authority to backstop them; as a result, clear protocols are required if nurses are to provide redirection at triage. Fraser Health is currently redirecting well patients at some sites who present asking for a COVID test to the testing facilities; however, there is an opportunity to develop additional redirect protocols that would support triage nurses.

Lessons Learned and Opportunities for Improvement

As a result of the pandemic, many General Practitioners (GPs) have switched to providing more care virtually, in some cases moving to an entirely virtual model. Though outside of the scope of this report, one of the lessons learned during COVID was that a blended model is required if unnecessary presentations to ED are to be avoided. In many cases, patients will self-triage and go to an ED because the care that they received (or feel that they received) from a GP was not up to the level of quality they expected when conducted virtually. In such cases, GPs need to be able to differentiate and be able to see patients in person when that is what is needed.

An opportunity for improvement was noted around the current process of documenting conversations with patients that present to an ED. Currently, our health care system does not allow for such conversations to be documented until the patient has completed the triage process. One of the learnings from the experience of COVID-19 is that physicians need to be able to document conversations earlier in the process, so that advice can be given to patients without needing to go through a full triage registration process (indemnification, cohesion etc.). This helps speed up the process of connecting patients who do not require emergent care with non-ED services.

ESAC Recommendations

1. **To ensure ED resources are focused on supporting patients who require emergent care, enable the use of:**
    - **Pre-screening prior to presentation to the ED**
    - **Virtual triage/navigation**
    - **Physician-mediated triage/navigation; or**
    - **Nurse triage with protocols to enable appropriate redirection of patients**

2. **To facilitate faster processing and discharge of patients who do not require emergent care, consider implementing a process for documentation of physician conversations with patients without requiring a full triage registration process.**

Optimized ED Flow Strategies

Prior to the pandemic, ED crowding was a common occurrence across the province, resulting in the normalization of this state of affairs (normalization, in this instance, being a negative attribute in that it made a sub-optimal condition the standard). As noted in the 2018 ESAC ED Crowding Report, the imbalance between patients coming into and leaving the ED resulted in longer patient stays.

As a result of COVID-19, it became unacceptable to keep a non-acute patient in an acute care bed, and new processes were implemented to reduce the number of patients that did not require, or no longer required, emergent care being treated in EDs. In addition to the screening and triage elements outlined in the previous section, this was also achieved by facilitating connections to alternative care options for patients whose care needs could be met outside of a hospital and accelerating discharge planning and implementation. Staffing levels in the ED were also increased, allowing care to be provided more quickly to patients, and data sources such as ward reports were used to keep a close eye on available capacity. In combination, these measures helped free up beds and improved patient flow.

Ready accessibility for an appropriate ED care space when needed was achieved in a number of ways. New ED urgent follow-up services, such as next day clinic appointment spots reserved for EDs and virtual follow up, were created and implemented to facilitate safe and rapid discharge disposition and more efficient care in the ED. A key element of this was promoting better integration between EDs and other

OPTIMIZED ED FLOW STRATEGIES

Entrenched Problem or Challenge

- ED input and output issues
- Normalization of ED (over)congestion

Responding to the Challenge

- Urgent follow-up (via UPCCs/other to obviate the need for admission or acute care bed utilization
- Appropriate staffing
- Health HR expansion/ reallocation
- Dedicated nurse navigators
- Ward reports to track occupancy, ALC numbers, available capacity, etc.

local services; this is explored in greater detail in the Integration with UPCCs and Community Services section.

Focusing on specific populations has also been an important element. Traditionally many high-risk (typically elderly) patients have been admitted, since there is no way for them to practically access alternative urgent support resources. In Northern Health, one site has nurses that find high-risk older patients and seek out opportunities for urgent follow-up which would support discharge rather than admission, improving patient care and safety while also reducing congestion and unnecessary admissions. A similar model is also used for psychiatry; a psychiatric triage nurse conducts the initial interview and looks for support services, or facilitates the admission process as required. Fraser Health has also adopted this type of approach, hiring dedicated nursing support to search for elderly patients and seek opportunities for urgent community support to avoid unnecessary admissions. Geriatric support nurses fulfill this function across many Fraser Health EDs.

Implementing such models recognizes that ED nurses and physicians cannot maintain real-time awareness of the services available in the community, and so having dedicated staff with this knowledge can help patients and families navigate to the care they need while freeing up ED resources for the patients that have no other options due to acuity or unavailability of community resources.

In addition to seeking opportunities for redirection to care outside of EDs, closer attention was also paid to staffing levels within the ED. Nursing numbers were increased when required to ensure that EDs were fully staffed (though it should be noted that this required pulling in staff from other departments, which may have an impact on those departments). This helped speed up the processing of patients through the ED and facilitated faster discharge or admission.

The use of data was a key facilitator to assist with monitoring and planning, including tracking hospital occupancy, ED volumes, and the number of hot zone versus cold zone patients to help with PPE use and precautions. Ward reports were used to monitor alternate level of care patient numbers, occupancy numbers, and capacity available in the hospital. The result was a more rapid, safe and efficient use of resources and therefore better planning and preparation for accelerated discharge of patients when surges are expected and additional capacity is required.

Lessons Learned and Opportunities for Improvement

Many of the lessons learned with regards to optimizing ED access relate to enabling an effective hand-off from the ED to other services. Discharge from one care space to another can be traumatic for patients, particularly if there isn't a smooth hand-off to the community. Better coordination of handover from ED to community was clearly identified as an area for improvement in both safety and efficiency, as was improved knowledge of services available, ideally in the form of an inventory combined with

access to real-time occupancy levels or wait time information. For effective connections with urgent follow-up services, it is important to have a healthcare worker whose primary focus is to facilitate this connection and ensure a smooth transition for the patient, to navigate an established process in place to redirect patients from the ED. This process requires clear criteria, direction for the patient, and timely access to the receiving service. When being redirected from an ED, the patient should be slotted in as appropriate for an appointment; patients should not go to the back of the queue, as this increases the likelihood of them returning to the ED. In order to ensure that this happens, EDs need to form partnerships with other resources and facilitate access to those resources, in effect acting as a seamless system.

Human resources also need to be expanded or reallocated when possible; having the staffing to ensure that hospitals have who they need to run their EDs was highlighted. If successful, staff burnout would also be reduced thus reducing turnover cost and staff struggling to provide optimum care as they would like.

Appropriate and adequate staff allocation does not necessarily involve securing additional resources; in fact, it may reduce overall costs by reducing a vicious cycle of needed overtime pay and reducing avoidable and costly patient safety events. This should also include the reallocation of specialist care. For example, having a mental health nurse in the ED would likely involve moving that nurse from a different unit, but would facilitate earlier decision-making and help avoid unnecessary hospital stays.

One suggested opportunity for improvement identified through the RLR was for specialists to be paid to be on call. While this may seem like an added expense, if it expedites an intervention that will be required anyway, it may reduce costs and wait times. For example, if the patient will require an operation, getting them in sooner by having the required specialists on call reduces the patient's length of stay, requires no additional care costs, and increases patient satisfaction.

ESAC Recommendation

3. **To reduce ED crowding and maintain the balance between ED input and output, facilitate:**
    - **Urgent follow-up, via UPCCs/hospital clinics/community clinics, to reduce the need for acute care bed utilization.**
    - **Appropriate staffing, through expansion or reallocation of staff when required, to speed up the processing of patients through the ED and facilitate faster discharge or admission.**
    - **Real-time reports to track hospital and community ALC numbers and bed capacity both in real-time and as trends, allowing for better planning and preparation for accelerated discharge of patients if required.**

Increased Integration with UPCCs and Community Settings

As part of the BC government's Primary Care Strategy, Urgent and Primary Care Centres (UPCCs) are being rolled out across the province. These centres both provide primary care to patients who currently do not have a family doctor or nurse practitioner and also provide weekend and after-hours care, taking pressure off hospital emergency departments. As of September 2020, there were 17 UPCCs in operation across the province, with an additional three due to open soon.

INTEGRATION WITH UPCCs AND COMMUNITY SETTINGS

Entrenched Problem or Challenge

- Timely Primary Care Access
- Gap between acute and primary care
- Public Health Capacity
- ED Overcrowding

Responding to the Challenge

- UPCCs Integrated at Primary/Acute interface, including:
  - 811, Public Health, and GP referrals to UPCCs instead of ED's
  - Bidirectional redirection of patients between EDs and UPCCs
  - Urgent follow-up capabilities
- Augmenting practice regulation for BCEHS

In the context of the COVID-19 pandemic, UPCCs assist with providing timely primary care access, addressing the gap between acute and primary care, increasing public health capacity, and reducing certain classes of patients who often go to the ED but can be taken care of in a well-staffed and equipped acute clinic. The ability for EDs to offload some of their volume to UPCCs, especially during periods when EDs were particularly vulnerable, allowed EDs to focus on providing emergent care. It also makes it easier for patients to keep appropriate distance while waiting for care or tests.

As many primary care practices closed their doors or limited in-person visits and switched to primarily offering care through virtual means during the pandemic, options for in-person care were reduced. Many patients who were assessed virtually required some in-person care, but many primary care offices were not set up with PPE and other infection prevention and control measures. In these circumstances, UPCCs provided in-person care and connected with family practices to enable a referral after a virtual visit with their family doctor.

UPCCs were also able to help fill gaps in the early stages of the public health response to the pandemic. For example, UPCCs were able to adapt to dealing with COVID within a very short period of time, becoming *de facto* COVID-19 testing sites within days, creating a space where early testing could happen and allowing public health to isolate and conduct contact tracing/case management right away. This helped meet an immediate need during the approximately three weeks that were required to set up and open testing sites. Once these official testing sites were opened, UPCCs continued to meet needs that were not met by these sites, for example assisting with patients that required a full assessment, i.e. children who can't be tested at testing sites; they also provided care for patients needing primary care for illnesses such as strep throat or pneumonia, who were not sick enough to require emergent care, but if not managed in a timely fashion, may progress and require avoidable admission.

UPCCs provide a less chaotic and more culturally safe environment compared to EDs (for non-emergent care), creating an alternative for individuals who are fearful of going to the ED as a result of negative personal experiences or cultural trauma. As UPCCs began to appear in communities, it was important to

start by creating a workplace culture that is sensitive to at-risk groups and marginalized communities. At the start, training began to serve the needs of local communities. Training included Indigenous cultural safety training and trauma-informed practice training for all staff. This proactive approach was part of the UPCC narrative from the beginning and helped ensure the needs of vulnerable populations were met. With this learning in place, staff have a sense of resiliency and intrinsic motivation for working with underserved populations.

UPCCs also provide an option for those who are looking for reduced wait times and may also be perceived as lower-risk environments in the context of the pandemic when compared to EDs. With shorter wait times and lower perceived risks, UPCCs are able to address both the physical and mental wellness needs of local populations. RLR participants also noted that as UPCCs quickly pivoted to support EDs during the pandemic, volumes quickly increased, which put pressure on human resources/staffing, which lagged at times as UPCCs tried to keep up with demand.

Finally, UPCCs have helped fill a service gap between primary and acute care. The public health system is well set up to provide care for hyper-acute events such as strokes, as well as for providing chronic care, but less so for meeting the needs of patients who require more than primary care but less than emergent care. UPCCs, especially those equipped to provide more comprehensive care (lab services, x-ray, social workers, etc.), help fill this gap.

In the context of the COVID-19 pandemic, greater integration between emergency departments and UPCCs, allowed for the redirection of patients to the most appropriate level of care, ensuring that ED

> *"In Vancouver and North Vancouver, we have been able to build a really strong sense of mutual purpose and mutual respect with the nearby EDs, such that there is a bidirectional redirection of patients based on predetermined criteria informed by leadership in both EDs and UPCCs."*
> *- Dr. Afshin Khazei*

resources were focused on patients requiring emergent care. For example, in Vancouver and North Vancouver UPCCs and EDs worked together to enable bidirectional redirection of patients based on predetermined criteria informed by leadership in both EDs and UPCCs. As a result, when a patient presented to an ED but was not in need of emergent care, they could be safely given the option to go to a UPCC. By the same token, UPCCs are set up to initially stabilize a patient requiring a higher level of care before transferring to an ED. The communication and coordination between EDs and UPPCs was very strong.

BC Children's Hospital has been working with UPCC medical Director Dr. Afshin Khazei on providing a redirect and urgent follow-up option for patients being seen in the ED that required an urgent follow-up, but where this follow-up could not happen with a primary care physician in a timely way for various reasons. They have collaboratively developed a set of criteria and patient education materials, available in their ED, that are utilized to create that pathway. This work is continuing, with ongoing bi-monthly meetings between UPCC medical director, BCCH ED Leadership, and Childhealth BC to identify opportunities and continue to build on and strengthen this initiative over time.

Lessons Learned and Opportunities for Improvement of UPCCs

Numerous lessons were learned for how to improve the operation of UPCCs that would also help further alleviate the burden on EDs. UPCCs have been well-positioned to provide patient-centered hours (extended hours, 365 days a year). However, they vary greatly in the care they are able to provide (e.g. laboratory, x-ray, social services). For example, the Vancouver City Center UPCC has had lab services, x-ray and ultrasound for some time. However, North Vancouver's UPCC has an x-ray but does not have the other diagnostics. Having this comprehensive care in place allows patients to be fully managed at a UPCC without having to visit the ED. This variability in scope of practice may also create confusion amongst the public about a UPCC's purpose and creates challenges for 811 and BC Ambulance to create a uniform set of rules to apply across all UPCCs. This could be improved by providing more comprehensive, standardized care across all UPCCs.

As COVID continues with us into the future, there are areas for improvement that will allow UPCCs to better serve local communities while becoming more integrated into BC's healthcare system. By providing more consistent comprehensive care across all UPCCs, UPCCs would be able to better provide support for EDs. With this more standardized approach, UPCCs would also be better positioned to work closely with 811 so a continuity of care can occur across the healthcare system. Timely access to care would also reduce mortality and morbidity, which would ultimately reduce the cost of care. Lastly, by proactively creating clearly defined workload models and agreements for staffing UPCCs based on patient volumes, UPCCs could maintain the resources needed to manage wait-times and avoid overflow back to EDs.

BCEHS – Opportunities for Integration with UPCCs and Increased Scope of Practice

UPCCs have been able to take the pressure off EDs when the COVID-19 crisis first began. Similarly, BCEHS has played an important supporting role by providing efficient and timely assistance in response to 911 calls throughout BC.

One area that has emerged as an opportunity for improved systemic integration is the ability for BCEHS to link into UPCCs. Currently, BCEHS responds to a call and strictly provides transportation services to the hospital. Having the ability to review a patient's condition on the scene and refer the patient to a UPCC, when applicable, would provide BCEHS with extra capacity and reduce the number of patients presenting to an ED.

By providing BCEHS with clear patient referral criteria, UPCCs may be able to reduce low acuity patient visits to the ED. Linking BCEHS and UPCCs via technology may allow for the ability to provide a handover notice to a UPCC and details of the presenting patient. Ultimately, BCEHS would be responsible for getting the patient to hospital if the UPCC did not accept the patient.

To further redirect low acuity calls, BCEHS would like to expand their clinical hub and provide telephone triage services. This hub would be the group that determines whether a patient should be referred to the ED or a UPCC. For this to happen, specific criteria would have to be developed around what situations a UPCC would accept (i.e. their capabilities).

By providing a link between BCEHS and UPCCs, responders would be able to provide an alternative for the patient when they arrive on scene or speak to the individual on the phone. However, there are currently some barriers in place that would have to be addressed to enable this. These include current regulations, educational costs, staffing requirements and technology improvements.

Currently, BCEHS is restricted to the scope of care they can provide when tending to a patient due to the Emergency Medical Assistant Licensing Board (EMALB) regulation. This results in patients having to be transported to EDs for further care. The EMALB regulation determines the scope of practice for paramedics which includes specific practice limits written into the regulation. As such, there are limitations on the care that can be provided, and it can be challenging to update the scope of practice (i.e. there would be a need for legislation changes or a ministerial order).

An adjustment to the scope of practice could also enable more robust education. Currently, members are only taught what is specifically outlined in the current regulations. If BCEHS were to expand their hub, there may also be a need for additional staff and improvements to IT infrastructure. This would include having the ability to integrate BCEHS paramedics with UPCCs and possibly hospitals, which would allow for referrals to UPCCs and handover notice to UPCCs (including patient details).

Some of these measures could be implemented as things stand today; however, the success of the implementation would be greater if there were higher levels of education and more adaptable regulation. Currently, a framework structure is in place and with the inclusion of these advances, greater efficiencies could be achieved.

ESAC Recommendations

4. **To reduce the use of EDs as the primary point of entry into the health system regardless of acuity, promote integration between EDs and UPCCs, where possible supported by:**
    - **Bidirectional redirection of patients between EDs and UPCCs based on predetermined criteria**
    - **Urgent follow-up capabilities**
    - **Standardizing services at UPCCs for ease of integration into a complex system.**
    - **Creating clearer pathways to quickly adjust human resourcing at UPCCs to keep up with changes in demand**

5. **To avoid default use of EDs for further care, explore augmenting the paramedic scope of practice and developing pathways to allow BCEHS to transport patients to UPCCs when emergent care is not required.**

Improved Capacity Within and Outside of EDs

The COVID-19 pandemic has highlighted the challenge of maintaining capacity in the ED to be able to assess patients quickly, in the right place, while maintaining appropriate infection prevention and control measures in the context of limited physical space. Though this issue existed prior to the pandemic, COVID-19 has brought added urgency and created the need to find new and innovative ways to maintain physical distancing and reduce the number of patients sitting together in ED waiting rooms.

This has been done in a number of ways, including decluttering waiting rooms to ensure that there is sufficient space to manage patient volumes, reducing visitors to keep down the number of people in the waiting room, the use of 8-1-1 to help patients navigate so that they understand where they need to go, providing 8-1-1 physician support to reduce unnecessary ED visits, and the use of specific patient navigators such as the Aboriginal Patient Navigator service. It has also involved the use of technology to help patients be where they need to be without having to spend time waiting in a location where they may be at risk of exposure.

IMPROVED CAPACITY WITHIN AND OUTSIDE OF EMERGENCY DEPTARTMENTS

Entrenched Problem or Challenge

- Limited physical space within the Emergency Department
- Maintaining infection prevention and control measures

Responding to the Challenge

- Virtual Waiting Room Apps
- Handheld devices to direct patients
- SMS updates for mobile devices
- Indigenous Patient Liaisons/Navigators

Technology has been used to assist with this issue in a number of different ways, particularly to assist with ambulatory, relatively healthy patients. As these types of patients will often face longer wait times in the ED as a result of having lower acuity conditions, spatial management to reduce infection risk for this patient group is particularly important. At Surrey Memorial Hospital, an app has been developed that allows the patient to receive texts on their smart phones telling them to go to a specific place to meet with a nurse or physician. Similar systems are being trialed at Royal Columbian Hospital (RCH). After registering a patient, RCH staff can push an automatic text to the patient informing them that they are needed in a specific location in the ED. The app also allows patients who have been assessed to go for a walk, then get called back for reassessment when results are in. For non-emergent patients, the reassessment can also be done virtually or staff can send specific links to discharge information by text.

It should, however, be noted that these technologies may not be accessible to all patients, and barriers may exist for those who are vulnerable medically, culturally, or socially; those at higher risk of bad outcomes from an infectious disease may not be able to take advantage of these technologies or processes. Patients who have English as a second language, Indigenous peoples, MHSU patients, homeless people, and other vulnerable groups may have more difficulty using some of these technologies.

Lessons Learned and Opportunities for Improvement

An opportunity for improvement noted by RLR participants was to set up a different area for patients with multiple comorbidities that could be vulnerable to infectious diseases, to segregate them away

from typical patients. In addition to the separation of patients with symptoms from those without symptoms, further separating those who have multiple conditions that make them more vulnerable from those who are relatively healthy would help reduce the risk for these more vulnerable patients.

It was also noted that Indigenous patient navigators typically work on a standard 9:00 am to 5:00 pm schedule, which did not necessarily correspond to when Indigenous patients were most likely to present. The value of such resources is significantly enhanced when accessibility is improved.

ESAC Recommendation

6. **To maintain appropriate infection prevention and control precautions in the context of limited physical space within EDs, especially during pandemic events, leverage the use of:**
    - **Virtual Waiting Room Apps**
    - **Handheld devices to direct patients**
    - **SMS updates for mobile devices**
    - **Indigenous Patient Liaisons/Navigators (available outside of standard 9:00-5:00 working hours)**

Peer-to-Peer Emergency Virtual Real-Time Virtual Support

Providing specialized care to rural and remote communities across BC has been a persistent issue due to our broad and difficult geography. The pandemic put further strain on the situation by hindering supply chains, reducing travel options, and generally drawing resources away from standard medical care. As a result, healthcare providers are being pushed to the fringes of their respective scopes of practice, especially in smaller communities. In response to such challenges, healthcare providers across BC have developed virtual solutions to support their colleagues.

Peer-to-peer emergency virtual real-time support encompasses a number of different programs that provide healthcare professionals with access to support from colleagues across the province. These networks provide diverse support, with services ranging from clinical decision-making assistance to culturally sensitive care guidance. This collaborative approach helps to broaden the sometimes-rigid downstream referral pathways that rural clinicians have available to them, and facilitate smooth care transfers when necessary.

Physicians, nurses, and paramedics have all set up their own virtual networks to aid their peers working in situations with limited resources and/or limited support. Some of the networks discussed are described below.

PEER TO PEER EMERGENCY VIRTUAL REAL-TIME SUPPORT

Entrenched Problem or Challenge

- Spatial/geographical transport Issues
- Lack of colleague support for clinicians and paramedics
- Uneven health system resource distribution (resources centralized in urban centers)

Responding to the Challenge

- Rural Coordination Centre of BC Real-Time Virtual Support Pathways:
    - Rural Urgent Doctor in-aid (RUDi)
    - Rural Outreach Support (ROSe)
    - Child Health Advice in Real Time Electronically (CHARLiE)
    - Maternity and Babies Advice Line (MaBAL)
- BCEHS CliniCall system

Rural Coordination Centre of BC Real-Time Virtual Support Pathways: RUDi, ROSe, CHARLiE, MaBAL, Dermatology

The Rural Coordination Centre of BC in conjunction with the BC Emergency Medicine Network offers a number of real-time virtual support (RTVS) pathways to assist rural physicians and nursing stations, giving them access to just-in-time advice and culturally safe, compassionate support. Each pathway provides specialized support in a certain area of care. For example, Rural Urgent Doctors in-aid (RUDi) is focused on emergency care and provides 24/7 service by Zoom and phone to support rural healthcare providers with a patient. Rural healthcare providers are provided with an iPad loaded with Zoom software as well as emergency protocols like resuscitations; using this resource, they can touch one button and connect with a live physician experienced in emergency care and the challenges of remote environments.

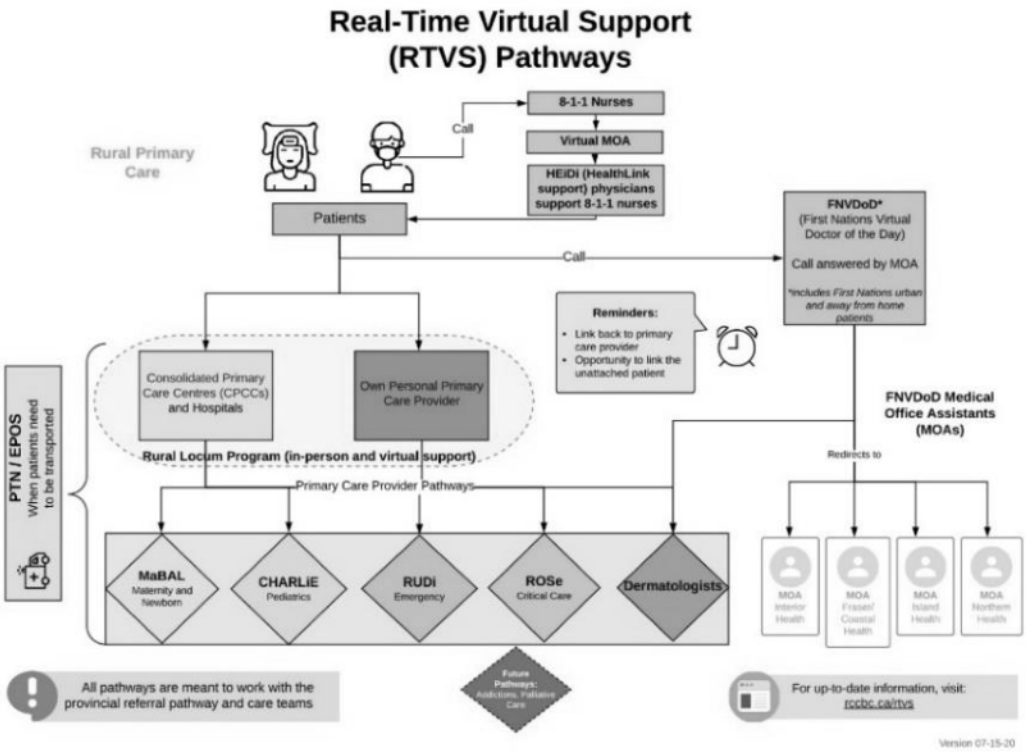
The various peer-to-peer services are briefly detailed in the table below:

RTVS Pathways			
Area of Care	**Services Provided**	**Availability**	**Platform(s)**
***RUDi** - Rural Urgent Doctor in-aid*			
Emergency	Immediate support with a patient or preparatory simulation, including providing advice, reviewing a case, running through simulation scenarios, helping to navigate the healthcare system, assisting with transport preparations and providing collaborative support in critical times.	24/7	Zoom
***ROSe** – Rural Outreach Support*			
Critical Care	Support with complex, acutely ill patients, and those who are deteriorating, provided by intensivist/critical care specialists. Assists rural healthcare providers with consultation, second opinion, or ongoing virtual support.	24/7	Zoom Telephone Mobile App
***MaBAL** – Maternity and Babies Advice Line*			
Maternity and Newborn	Guidance on urgent and non-urgent pre-conception, prenatal, antenatal, intrapartum, and postpartum presentations, for both moms and newborns. Provides assistance in assessment and problem-solving and rapidly facilitate access to specialist expertise from regional care center obstetricians or provincial pediatricians.	24/7	Zoom
***CHARLiE** – Child Health Advice in Real-Time Electronically*			
Pediatrics	Urgent specialized pediatric support for rural healthcare providers who are presented with urgent problems in children and youth. Support includes providing a second opinion, reviewing a case, helping to navigate the healthcare system, and providing collaborative support including care of youth mental illness.	24/7	Zoom
UBC Dermatology Rural and Remote service			
Dermatology	Residents will use submitted information to reach a working diagnosis and plan, which is reviewed with dermatology staff and the referring practitioner. Follow-up plans are made, and a written note is faxed.	Monday to Friday, 9:00 am - 5:00 pm	Telephone Text Photo Teleconference

These services continue to grow and integrate into the BC health system. For instance, the CHARLiE network is partnering with the Compass program run by the BC Children's Hospital. The program provides support services for youth dealing with mental health and substance use issues. This includes assistance with a wide array of issues, diagnostic clarification, medication recommendations and treatment planning. This partnership will add a new dimension to the CHARLiE network and aid rural clinicians in the delivery of pediatric care.

A schematic of how these services interact with other virtual services in BC is provided below.

Figure 1: Rural Coordination Centre of BC – Real-Time Viral Support Pathways



Lessons Learned and Opportunities for Improvement

Many of the benefits of the RTVS in BC are obvious: the technology allows rural healthcare providers the ability to connect with their peers to help provide skilled and culturally safe healthcare. It offers rural clinicians opportunities to develop relationships with their colleagues, helping to break down healthcare silos and supporting the spread of best emergency care practices within the medical community. Early impressions of the RTVS service suggest that healthcare providers are happy with the service and appreciate the opportunity to connect and learn from their colleagues. This in turn helps rural and remote physicians (particularly fresh graduates or international medical graduates) feel less isolated and worry less that they will have to look after critical cases on their own. It is expected that this will significantly aid in recruitment and retention to these communities.

A critical aspect that was identified and considered necessary to the long-term adoption of RTVS pathways is the need for further integration into the BC health system. This, of course, is a multifaceted

issue and would need to include further development in areas such as health authority coordination, appropriate compensation models, provincial HER, 24/7 access to necessary services, among others. BC's digital infrastructure will also have to be further optimized, as some providers have noted that they do not have access to the necessary equipment or connectivity to facilitate virtual interactions.

BCEHS CliniCall System

Like the Rural Coordination Centre of BC, BCEHS paramedics also utilize virtual peer-to-peer services to connect with their peers through the CliniCall service. CliniCall is currently a voice-only consultation service used to provide support for paramedics who need advice when working with patients. With the onset of the COVID-19 pandemic, BCEHS began working on adding video to the service as well. Unlike other virtual real-time virtual peer-to-peer supports, which are usually provided by a healthcare worker in one facility to a healthcare worker in another facility, the BCEHS service is completely mobile, with the ambulance serving as the care facility. This presents unique challenges, particularly with limited 3G and LTE coverage in many areas of the province. This limits the ability to use video features, and in many instances makes the service unusable altogether, leaving paramedics isolated with no ability to reach out for assistance.

Lessons Learned and Opportunities for Improvement

The CliniCall program supports are especially beneficial to junior paramedics. Junior paramedics tend to fill postings in rural and remote communities that have few support resources and can push the limits of their professional comfort zones. The CliniCall program provides these junior members with a means to consult senior paramedics to access support in providing appropriate and competent emergency care.

CliniCall is also proving to be beneficial in situations where paramedics are required to render emergency care to patients with complex needs. The program provides access to paramedic specialists who can provide real-time decision-making support and treatment recommendations. Alternatively, if the complexity warrants, paramedics may access emergency physician assistance through the CliniCall system.

As with many new technologies, BCEHS has run into some obstacles with the CliniCall system. Perhaps the biggest impediment for paramedics utilizing the system is the lack of telecommunications connectivity in rural and remote communities across the province. The nature of emergency response requires that paramedics work in a mobile fashion, rather than at a fixed location (i.e. a hospital or clinic). As such, they rely on mobile networks to communicate with the health system, which are quite scarce in many parts of the province. Better 3G and LTE coverage would improve paramedics access to the CliniCall system considerably.

Another area for improvement is the BCEHS IT infrastructure itself. It was noted that BCEHS needs to upgrade its data servers and communications infrastructure to enable additional functionality, such as Voice Over the Internet Protocols. Currently, BCEHS utilizes an analogue system but a switch to a digital system would be necessary to support these improvements. Also noted was the need to be able to record CliniCall consultations with a data retention system, for the purposes of quality improvement and quality assurance. This is currently standard practice for 911 calls and BCEHS dispatch communications, which are provisioned under legislation, but no such legislation enables capture of these peer-to-peer consultations. Navigating privacy laws will be necessary to enable this practice.

ESAC Recommendation

7. **Further support rural practitioners and patients by facilitating access to specialist support, thus improving care and at times reducing the need to transport, by supporting and seeking opportunities to expand peer-to-peer and caregiver to patient virtual real-time support pathways such as:**
    - **Rural Coordination Centre of BC Real-Time Virtual Support Pathways:**
        - **Rural Urgent Doctor in-aid (RUDi)**
        - **Rural Outreach Support (ROSe)**
        - **Child Health Advice in Real-Time Electronically (CHARLiE)**
        - **Maternity and Babies Advice Line (MaBAL)**
    - **BCEHS CliniCall system for peer-to-peer support**

Clinician to Patient Emergency Real-Time Virtual Support

8-1-1 and HealthLink BC iDoctor-in-assistance

The 8-1-1 telephone line, a free-of-charge provincial health information and advice phone line, is operated by HealthLink BC, a part of the Ministry of Health. Patients who call 8-1-1 speak to a health service navigator, who can help them find health information and services or connect them directly with a registered nurse, a registered dietitian, a qualified exercise professional, or a pharmacist.

The use of the 8-1-1 service is relatively evenly distributed from a geographic perspective throughout BC. Patients' ages range from newborns to seniors, with a bimodal distribution of younger (20s - 40s) and older (seniors) patients with higher usage. There is some variation by sex, with more females than males using the service.

As a result of COVID-19, 8-1-1 experienced both a surge in the number of calls received as well as increased complexity in these calls. In response, HealthLink BC iDoctor-in-assistance, (HEiDi) was introduced on April 6th, 2020, to support 8-1-1 callers with physicians throughout BC.

HEiDi physicians, either emergency physicians or full service family physicians, work with 8-1-1 nurses and provide them with support in determining how best to address the patient's needs, including deciding whether the patient needs to go to an emergency department, or whether their care needs can be met in the community. They also provide information for patients for optimal self-management and assist with call volumes because of the

CLINICIAN TO PATIENT REAL-TIME VIRTUAL SUPPORT

Entrenched Problem or Challenge

- Limited primary care capacity and reduced physician access during COVID-19 pandemic
- Public fear of accessing EDs/hospitals

Responding to the Challenge

- Virtual Physician Services via 8-1-1 / HealthLink BC Emergency iDoctor-in-assistance (HEiDi)
- Culturally safe virtual services for Indigenous Peoples: First Nations Virtual Doctor of the Day
- BCEHS Community Paramedicine virtual home visits

complexity of cases. 8-1-1 nurses can also transfer calls that meet specified clinical criteria to a medical office assistant, who will then arrange for a virtual visit or phone call with a HEiDi physician. Since its launch on April 6, 2020, HEiDi's partnership with 8-1-1 nurses has supported the diversion of approximately 7 out of 10 callers from going to EDs or UPCCs within the first 24 hours, accelerated 3 out of 20 calls to go to EDs right away for medical emergencies, and achieved over 98% patient satisfaction. As of November 16th, HEiDi has interacted with its 15,000th caller.

First Nations Virtual Doctor of the Day and First Nations Virtual Substance Use and Psychiatry Service

The First Nations Virtual Doctor of the Day (FNVDoD) is a free, virtual physician consultation service. It was introduced on April 1st, 2020, by the First Nations Health Authority (FNHA) in response to primary care gaps experienced by First Nations peoples in BC that are being broadened by the strain that the COVID-19 pandemic is placing on the province. In smaller rural and remote First Nations communities where patients are not attached or poorly attached to a primary care provider, hospital emergency rooms have been the only reliable source of both primary and acute healthcare. However, this often requires First Nations peoples to travel long distances to these hospitals, which are not designed to provide primary care and where First Nations patients may feel unsafe due to culturally unsafe care and racism. The FNVDoD provides First Nations peoples with "in community" and "away from home" access to culturally safe longitudinal care. FNVDoD can do significant assessment, ongoing care and follow up with community, and can maintain ongoing continuing relationships between the patient and the care team. These services are integrated into the RTVS pathway services (see Figure 1 on page 22) such as RUDi, ROSe and CHARLiE, with the intent being to create an entire system at the virtual care level to allow services across entire spectrum. Many of the physicians working in those services are also FNVDoD doctors.

FNVDoD can be accessed via phone or online and is available to First Nations peoples and their families, and also supports Métis and Inuit people that access the program. It can be accessed between 08:30 – 16:30 seven days a week, statutory holidays included, and no referral is necessary; patients contact the service and are greeted by a virtual medical office assistant (MOA) who works through the registration process with the patient before scheduling the appointment with a virtual doctor. The patient's region and home community are captured at intake, and because physicians in this program work in, live in or have significant experience with these communities and health authority along with local pathways, they understand how local services are delivered.

FNVDoD doctors are selected by a FNHA committee based on Indigenous heritage, lived experience, and/or experience with culture safety and humility, to ensure that the providers are in a good position to offer patients a culturally safe space. These doctors can provide a range of services that include counselling, review of signs and symptoms, prescriptions, laboratory orders, and medical imaging orders. A provincial EHR program has been developed for the service, which allows FNVDoD to provide follow-up services for patients or provide smooth transfers of care to other providers.

The First Nations Virtual Substance Use and Psychiatry Service (FNVSuPS), much like FNVDoD, is a free, virtual service for First Nations peoples in BC that can be accessed via phone or online. However, FNVSuPS requires patients have a referral to be able to access it, though referral into the program is a low barrier and any health care provider familiar with the patient is able to make a referral, including

FNVDoD doctors. The program was devised in response to the increasing severity of the opioid crisis during the pandemic and was launched in August; it is accessible 09:00-17:30.

The pandemic has left many people suffering from mental health and substance use issues without a primary care attachment and without a team that is equipped to care for such complex health concerns. The goal of the FNVSuPS is to provide specialized longitudinal care for First Nations peoples seeking help for these issues. Within the program, patients can access substance use and additions medicine, as well as psychiatric supports. The service also encourages the referring provider to attend the patient's specialist appointment to help ensure that local knowledge is available for care planning and so that there is continued support for the patient between visits. Care coordinators assist in both addictions and mental health and are there to support not only patient and referee but to also provide additional supports to the specialists when a patient requires more care on the ground closer to home.

Lessons Learned and Opportunities for Improvement

Early patient response to the FNVDoD and FNVSuPS has been quite positive. FNHA has received an outpour of feedback from First Nations patients who have used the service and want to share their experience and encourage other patients to use these services. Program organizers attribute the positive feedback to the deliberate engagement practices that were undertaken in the development process. The team engaged many community members via Zoom to provide input into how the service should be developed, which led to deliberate integration of First Nations-specific health supports within the services, such as traditional healers.

FNHA has been capturing comprehensive data and performance measures relating to these services and has been presenting them to leadership on a weekly basis. No detailed analysis of such data has been released yet, but early impressions are promising. For instance, by late September the two services had provided 8,000 clinical interactions since the inception of FNVDoD in April 2020. Many of these interactions obviated the need for patients to visit potentially distant hospitals or clinics to receive care, which is likely both a cost savings to the patient and the health system; it is also quite likely that the care provided in these virtual interactions was more appropriate (primary care vs. acute care) and culturally safe than the care they may have otherwise received.

It was noted that the pandemic itself was a major enabler in getting these services approved and implemented. Outside of the growing need for virtual health services during the pandemic, many privacy and regulatory structures were relaxed to enable rapid and robust deployment. However, some barriers arouse during the process as well. For instance, there were issues surrounding physician credentialing as many of these services are unprecedented in BC, until now. Continued integration of these services into the health system to avoid silos will shape how these services develop as the pandemic progresses, and potentially beyond.

The FNHA team noted that an area for improvement was the fact that both the FNVDoD and FNVSuPS services are only offered during normal business hours. This is a particular problem for mental health and substance use patients who often require support from the medical system during non-standard hours of the day. The team said that they would continue looking into solutions to resolve these coverage issues.

BCEHS Community Paramedicine Virtual Home Visits

BCEHS implemented virtual home visits through its community paramedicine program to continue to assist patients following the suspension of many in-person home visits. BCEHS worked to get patients onto virtual platforms and started doing daily or weekly virtual assessments using the Zoom platform. However, the onboarding of certain types of patients, particularly those who don't have access to smartphones or tablets, remains a challenge, as does the limited telecommunications infrastructure and internet access in many rural areas.

Paramedics found that these virtual home visits improved the patient experience, and also challenged previous beliefs about the need for face-to-face visits. Virtual visits allow people to go about their day-to-day lives more effectively. BCEHS is in the process of evaluating the effect of this initiative on mortality and outcomes, but it is found to reduce 911 responses by 40%.

Lessons Learned and Opportunities for Improvement

Currently, community paramedicine virtual home visits are used as a stand-alone solution, but an opportunity exists for greater integration with other programs. Using such virtual home visits together with other seamlessly-interacting systems would help improve the patient experience, avoiding the potential for choppy service from the patient perspective.

ESAC Recommendation

8. **To provide patients with care in their home communities, mitigate limited primary care capacity and reduced physician access, and minimize risks associated with public fear of accessing EDs and hospitals during the pandemic, support and seek opportunities to expand:**
    - **Virtual Physician Services via 8-1-1 / HealthLink BC Emergency iDoctor in-assistance (HEiDi)**
    - **Culturally safe virtual services for Indigenous Peoples through the First Nations Virtual Doctor of the Day program and First Nations Virtual Substance Use and Psychiatry Service**
    - **BCEHS Community Paramedicine virtual home visits**

Increased understanding of how to use PPE

Perhaps the most profound influence of the pandemic on acute care, or at least the most visible, has been the reinvigorated approach to PPE. The pandemic put extreme pressure on preexisting PPE procurement and protocols, which forced a rapid adaptation within the BC healthcare system to maintain patient care quality and safety. This transformation has affected all aspects concerning PPE, including ensuring a consistent and efficient supply chain; establishing a set of policies regarding distribution and allocation; putting in place policies and procedures regarding use or nonuse of PPE; and internal quality improvement and education initiatives with regards to donning, doffing and caring for patients using PPE appropriately.

The rapid uptake and implementation of PPE and associated protocols has been driven by several factors. Most prominently, enhanced PPE practices have been adopted as one of many protective measures to control infectious disease transmission. Such measures are of critical importance in the context of acute care as this is the first point of contact for many patients in a healthcare encounter and due to the associated vulnerability of many patients who require acute care. These procedures also provide the secondary benefit of promoting safety and control for both patients and providers, helping to mitigate stress levels during healthcare interactions.

INCREASED UNDERSTANDING OF HOW TO USE PPE

Entrenched Problem or Challenge

- Infectious disease transmission, particularly for patients with frailty and/or comorbidities

Responding to the Challenge

- Robust and consistent supply chains
- Consistent policies regarding use/non-use of PPE
- Quality improvement and education initiatives regarding proper use of PPE

Early evidence regarding enhanced PPE protocols has been positive, but largely anecdotal. In terms of morbidity and mortality, BC has not seen healthcare providers becoming ill at rates seen in other jurisdictions. The proportion of acute care providers and the proportion of acute care outbreaks have also been relatively low when compared to many other countries. Anecdotal evidence from an operational review suggests that the enhanced PPE protocols do not have a negative effect on provider performance, as the review found that there has been no decrease in team performance or impact on patient outcomes during intubation procedures, despite the context of the pandemic.

Lessons Learned and Opportunities for Improvement

Some acute care providers have noted that despite the positive impact of the new PPE protocols, there are some areas for improvement. There appears to be a lack of protocol consistency between sites and between health authorities, which may be driven by differential access to PPE supply. This appears to be particularly prominent for some procedures such as AGMPs and during patient transfers.

Similarly, RLR participants noted areas of improvement for the new provincial guidance on contingency planning for PPE (Emergency Prioritization in a Pandemic PPE Allocation Framework). Currently, the algorithm for PPE priority is listed in order of 1: critical care staff, 2: staff working on COVID-19 cohorted units or wards, and 3: emergency and primary care workers. Participants noted that patients with respiratory distress and those requiring intubation were a lower priority than wards that do not perform aerosol generating medical procedures. The group suggested that increased ED representation on the contingency committee would be beneficial.

ESAC Recommendation

9. **To avoid or reduce infectious disease transmission, particularly for patients with frailty and/or comorbidities, support appropriate PPE use through:**
    - **Robust and consistent supply chains**
    - **Consistent policies regarding the use and non-use of PPE**
    - **Quality improvement and education initiatives regarding the proper use of PPE**

Adequate Negative Pressure Rooms and Negative Airflow to Meet Unexpected Pandemic Needs

Negative Pressure Rooms

In the context of COVID-19, negative pressure resuscitation rooms provide a safe environment in which COVID-positive patients can be safely isolated away from hospital patients and staff. Negative pressure rooms generate pressure lower than their surroundings, allowing limited air into the room while safely pulling air from the room out through a filter leading to outside the building.

In preparing for pandemic-related surges, the construction of additional negative pressure rooms would be beneficial. In doing so, planning process details may vary from health authority to health authority; however, three important components remain. This includes conducting an environmental scan/capacity analysis, working with facilities and IPAC to review guidelines, and reviewing workflow.

Performing an environmental scan and capacity analysis of the current hospital is an important starting point. Based on the hospital layout and age, the ability to add rooms may vary. For Vancouver Coastal Health's Lions Gate Hospital (LGH), it was decided that temporary negative pressure rooms with removable walls was the best solution. With this in mind, an environmental scan and capacity analysis began early on and physicians were instrumental in identifying these needs. From this assessment, it was observed that there was an ability to add additional negative pressure rooms to the ICU and ED. The ICU increased from 3 to 9 negative pressure rooms, as it was determined that this was an environment where staff may be performing frequent AGMP procedures. In the ED, one of the trauma bays was also converted into a negative pressure room, which allowed for isolation from patients while providing staff with the ability to intubate patients before they move further into the hospital. This room also provided a larger space for a variety of staff who may be tending to the patient. A second negative pressure room was also added to the operating room.

NEGATIVE PRESSURE ROOMS & NEGATIVE AIRFLOW

Entrenched Problem or Challenge

- Infectious disease transmission
- Ability to isolate the patient (patient safety) and protection of staff

Responding to the Challenge

- Negative pressure rooms
- Negative airflow
- Review of workflow processes

When planning the creation of these temporary rooms for LGH, guidelines were reviewed in collaboration with IPAC and facilities. This included reviewing guidelines on aerosol settling times (i.e. after an AGMP is performed) and engaging cleaning services to discuss how long staff must wait after a patient vacates to allow for safe cleaning. From this, an environmental review was conducted to determine when the last air cycle was tested in current negative pressure rooms. Throughout this assessment, it was also important to also use a priority and lean lens. This includes assessing staff members and equipment that should be in a negative pressure room to prevent unnecessary cross contamination.

Reviewing the workflow of patients through the hospital is another important element of the planning process. This can include reviewing the flow of patients from the ED to the inpatient unit, ICU or imaging department. For LGH, running through simulations ensured the location of the negative pressure rooms were appropriate and processes were established to allow for appropriate patient flow. Through

simulations, LGH was able to include only what was necessary for negative pressure rooms and removed a few hot and cold zones as they created physical barriers and impeded capacity. When creating these rooms, it was also vital to assess what the priority was for each room (i.e. value add). For example, to support the ED, a decontamination room outside of the ED was used to perform intubations for patients that came in with iGel airways with EHS. iGel airways are considered open systems as compared to intubation that is a closed system once in place (secures the airway of a patient but patient is considered Aerosol Generating Medical Procedure) and this posed a significant exposure risk to health care professionals. As such, this negative pressure decontamination room was used to secure a patient's airway/intubate the patient prior to the ED.

Stemming from these simulations, LGH also developed Code 66 (now adopted by the region) which indicates to staff that a patient requires a negative pressure room and is a potential suspect/or COVID positive patient with significant risk of exposure related to aerosol generating procedures. From simulations, a process was set up with the EHS team to call the unit PCC prior to arriving, giving the team at LGH a heads up so the team could announce the page overhead and the team could get ready with appropriate PPE to receive the patient. LGH looked for quick pathways for least exposure from the EHS door to the negative pressure room. Through practice, it was determined that this room was too small and LGH had to convert one of their trauma bays into a negative pressure room to allow the team to respond to a larger trauma and quicker/safer access to trauma lifesaving equipment/supplies.

Once the planning stages are complete and the temporary negative pressure rooms are built, it is important to work with facilities to make sure everything worked sufficiently. For LGH, staff reviewed the new workflows that ensured patient and staff safety. This included workflow in the room and patient flow to and from the room. These workflows included: making sure staff were able to attend to the patient in a safe manner, listing who would be taking the patient, and what equipment was required. To support the ED team and COVID patients requiring intubations, LGH developed a pathway to move the patient quickly to ICU for intubation to reduce AGMP in a crowded ED. Having access to more negative pressure rooms in the ICU supported this pathway.

Lessons Learned and Opportunities for Improvement

In total the assessment for LGH hospital took 6-7 days. Putting together the temporary negative pressure room then only took one day. With the review that took place, the work that LGH undertook can now be scaled up or scaled down quite quickly. To date, LGH has not seen one patient-to-provider infection, likely due to this work (among other initiatives).

One notable success at VCH was the continued use of the EOC. This continued process has allowed for faster responses, such as responding to the need to create more negative pressure rooms. As soon as a need was identified by physicians, the EOC leadership was quick to facilitate. However, as health authorities move forward with creating negative pressure rooms, challenges can occur.

Working in negative pressure rooms is resource-intensive. With LGH staff in full PPE gear, communication was a significant challenge between healthcare workers. LGH practised various strategies such as portable radios to communicate with the team inside and outside the room; use of whiteboards to ask for supplies from the runner nurse outside the room. As the intubation is in

progress, the team inside the room cannot leave the patient. Communication with the outside team is key for safety and good team function.

Although infrastructure was not as much of a barrier at LGH, other lessons can be learned. For example, in some cases, the fans that were being used were very strong, which caused nearby areas to become negatively pressurized as well. At times, it was also difficult to keep all negative pressure rooms at the same pressure, especially when introducing new rooms. Lastly, the balance of managing workloads and workflow processes can be time-consuming, but is important in ensuring the safety of patients and staff.

Negative Airflow

As COVID-19 became more prevalent in BC, hospital bed capacity became a larger concern. One barrier to creating permanent negative pressure rooms is the time required to renovate. Creating a new negative pressure room can take months, and this can put currently available beds in jeopardy during the renovation. For example, St. Paul's trauma room currently holds two beds but does not provide negative pressure. Rather than pulling these beds for the time being to renovate, an alternative solution emerged: updating the room to provide negative airflow. This process is a faster alternative in a time where bed capacity counts.

Providing negative airflow in specific hospital rooms is another fast alternative that is also being explored. This involves setting up an HVAC system to provide negative air throughout the room. This system also allows the air to be filtered more frequently. For example, prior to installing an HVAC system, air could be exchanged every hour. With the negative airflow, air is filtered and exchanged every 15 minutes.

Similar to negative pressure rooms, barriers to the use of negative airflow include space issues. In this case, ceiling space can be a concern for installing negative airflow systems. Ideally in both cases, if time and space permit, the need to build permanent negative pressure rooms remains.

ESAC Recommendation

10. **To reduce the risk of infectious disease transmission, maintain the ability to isolate the patient for their safety and the protection of staff by increasing the availability of negative pressure rooms or rooms with negative airflow where feasible.**

Enhanced Communication Between Operational Leadership and Emergency Care Providers

Prior to the pandemic, a communication divide existed between executive decision-makers and clinicians, resulting in decision-making silos. The pandemic shone a light on this disconnect, however, and the implementation of the Emergency Operations Centre (EOC) structure, increased communications opportunities outside of the EOC structure, and the creation of discussion groups through apps helped to improve communications.

ENHANCED COMMUNICATION BETWEEN OPERATION LEADERSHIP AND EMERGENCY CARE PROVIDERS

Entrenched Problem or Challenge

- Appreciable communication divide between executive decision-makers and clinicians
- Decision-making silos

Responding to the Challenge

- Integrated EOC to provide a forum for communication between executive and clinicians
- Cascading communications
- Increased communications opportunities via team meetings, SBARs, etc.
- Discussion groups through apps (i.e. WhatsApp, etc.)

The EOC provided a forum for unprecedented communication between executives and clinicians. Following the implementation of the EOC, participants discovered that decision-makers previously had limited knowledge about the downstream effects of their decisions on clinical areas, and vice versa. Providing clinicians with greater access to executive generated better buy-in and reduced the tendency to operate in silos. RLR participants noted that the EOC structure was not a panacea and could be chaotic (particularly in the early stages) or unwieldy at times. Overall, however, it did increase communication and information flows.

While direct participation in the EOC was only open to higher-level staff, the EOC influenced information sharing outside of direct participation as well. Staff who attended EOC meetings provided a debrief to their teams and so on, creating a cascading effect of information sharing. At VCH, staff booked peripheral meetings where operational staff and clinicians could talk about what happened at the EOC meetings and what has been happening on the front line, helping draw the connection between the two. The expectation was that those who attended disseminated to their colleagues. This was further supplemented through discussion groups set up through WhatsApp and the use of SBARs.

The experience at PHSA was similar, with the EOC structure reducing the gulf that had previously existed between clinicians and executives. This made it easier to escalate critically important policies and procedures for sign-off and approval. Much like at Vancouver Coastal, many smaller groups began holding information-sharing meetings, with the information then shared more widely through clinical networks, supplemented by the use of virtual meetings and tools such as SharePoint. While many of the information-sharing platforms used at PHSA had very restricted access during normal times, the EOC opened these up so that staff could access them from home, making information dissemination easier.

Based on the experience learned as a result of the pandemic, moving forward, VCH is providing executives greater access to clinical areas, so that they can discuss plans or see how their already implemented plans are playing out in that clinical area itself.

> *In our experience at BC Childrens' Hospital with the EOC structure, one of the universal benefits was connecting executive leaders and clinical staff in an unprecedented manner, which everyone loved. This was enabled largely by processes and standardized work flows, such as group meetings, SBARs, etc.*
>
> *-Dr. Garth Meckler*

Lessons Learned and Opportunities for Improvement

Participants noted that overtime compensation helped with some of the extra effort that went into these improved communication opportunities, but foreseeably the intensity could be scaled back and still preserve many of the "wins." These include the notion of monthly meetings with representation from leadership and clinicians along with additional communication processes. Depending on the model that is used going forward, resources and costs to consider include administrative support, a meeting chair, data support staff and standardized technology platforms.

Moving forward, the RLR group agreed that there are a few areas for improvement. For example, peripheral meetings that took place following EOC meetings did not always have full representation. This is important as information can be lost which can be crucial for groups that are on the ground level (i.e. front line nursing, CNE, CNS etc.). Lastly, depending on the stage of COVID outbreaks, the full structure of the EOC may not be necessary and could simply be at a local level, with access to the local president and COO. As we continue to manage COVID in regional health authorities, it would also be beneficial to have a standardized structure across health authorities, to the extent possible.

This connection between policymakers and front-line staff and patients is a fundamental tenet of a Learning Health System.

ESAC Recommendation

11. **To facilitate communication between executive decision-makers and clinicians and reduce decision-making silos, enable the use of:**
    - **Integrated EOC to provide a forum for communication between executive and clinicians**
    - **Cascading communications**
    - **Increased communications opportunities via team meetings, SBARs, etc.**
    - **Discussion groups through appropriate social media tools**

Inventory of Promising Initiatives

In addition to the most important initiatives outlined in the previous section, numerous other beneficial initiatives were identified through the course of the Rapid Learning Review. While these have not been codified to the same level of detail, the table below presents a brief summary of each initiative and where it emerged or has been implemented, as well as any additional notes or context from the health authorities using it. The intent of this inventory is to serve as a resource for information sharing across all health authorities, providing those that have not implemented these initiatives a snapshot of what has worked well elsewhere and promoting shared learning.

Promising Initiative	Description/Comments	Health Authority Implementation								Dimension(s) of Quality	Area(s) of Care
		BCEHS ALL HAs	IHA	FHA	NHA	VCHA	VIHA	PHSA	FNHA		
Clinical Initiatives											
Screening, Diagnosis & Management											
Pivot Nurse	• First member of a hospital or ED that a patient will meet. These greeters at entrances are also screening for illness.			X	X	X				Safety, Accessibility	Strengthening Health and Wellness
Expand Clinical Triage in Dispatch	• A nurse that does triage prior to arriving at hospital. • FHA - Virtual Care Nurse: Nurse with emergency/Primary care experience.	X		X	X			X		Accessibility, Appropriateness	Efficiency
Virtual Health Assessments within Community Paramedicine Scope of Practice		X								Accessibility	Strengthening Health and Wellness, Returning to Health and Wellness, Living with Illness or Disability
Utilize Paramedic Specialists for Clinical Triage in Dispatch		X								Efficiency	Strengthening Health and Wellness, Returning to Health and Wellness, Living with Illness or Disability
Changes to ACP scope of practice to include interfacility transfers	• FHA: Working in collaboration with BCEHS for Fraser East transfers.	X		X	X	X				Effectiveness	Strengthening Health and Wellness, Returning to Health and Wellness, Living with Illness or Disability

Promising Initiative	Description/ Comments	BCEHS ALL HAs	IHA	FHA	NHA	VCHA	VIHA	PHSA	FNHA	Dimensions of Quality	Area(s) of Care
Enhanced safety procedures and approaches for paramedics involved in AGMPs		X			X	X		X		Safety	Returning to Health and Wellness
GeneXpert devices for point of care testing	• Rapid Covid testing for point of care testing.					X			X	Safety	Strengthening Health and Wellness
Establishing "closer to home" testing for First Nations People living in rural and remote areas.	• This includes enhanced scope changes (i.e., LPN) to perform collection of specimens for COVID-19 testing (NPS - nasal pharyngeal swab within scope of RN practice).								X	Respect, Safety, Equity	Strengthening Health and Wellness
Patient Flow & Surge Capacity											
Virtual Waiting Room App	• Waitwhile app: tracks a patient's wait time in real-time. Ability to see wait times broken down by services provided, allowing for more accurate estimates. • FHA: Queue virtual app to be piloted at SMH ED			X		X				Safety	All
Reduce Number of Visitors Allowed	• Essential visitors only, consistent with BC policy		X	X	X	X	X	X		Safety	Strengthening Health and Wellness
Use of 811	• Operated by HealthLink BC, 8-1-1 is a free-of-charge provincial health information and advice phone line available in BC. • IHA: Used to give people access to advice on when to get tested or present for assessment in an ED or Doctors office.		X		X	X		X		Accessibility	All
Declutter and reorganization of EDs and Staff Lounges	• Declutter and reorganization of EDs including staff lounges to ensure patient spaces were adequate for suspected COVID patients. • FHA: Decluttering – environmental scans to ensure decluttered care spaces, shelves are clear of supplies etc. • Review of Break room processes (prevent breeches, reduce risk associated to transmission etc.) • Ensure High Risk patients (meets COVID screening criteria) are separated from low risk		X	X	X	X	X	X		Safety Efficiency	All

(cont.)	patients (no COVID symptoms, travel Hx) – Expand and contracting these areas based on daily/weekly volume. • IHA: All EDs, Rural to Urban, went through ED flow restructuring to allow for Hot and Cold zones. Team effort with all stakeholders and administration.										
Promising Initiative	**Description/ Comments**	BCEHS ALL HAs	IHA	FHA	NHA	VCHA	VIHA	PHSA	FNHA	**Dimensions of Quality**	**Area(s) of Care**
Physical Infrastructure											
Negative Pressure Resuscitation Rooms	• Negative pressure rooms help prevent airborne diseases (such as COVID-19) from escaping the room and infecting other people. A machine pulls air into the room, then filters the air before moving it outside. • FHA: 5 ED redevelopments – ensure adequate negative pressure rooms. Also with positive pressure Resus/Trauma rooms- ensure there is a negative pressure Ante Room. • IHA: Where possible these spaces were created – many creative solutions were implemented through a team effort.		X	X	X	X	X	X		Safety, Effectiveness	All
Integration with UPCC	• FHA: Virtual Care Nurse initiative • IHA: Kamloops was a good example of a joint effort between the ED and the UPCC to help manage the flow of covid suspect cases.		X	X	X	X		X		Accessibility, Appropriateness, Efficiency	All
Virtual Platforms for Infection Prevention & Control											
Video Communication w/Patients in Insolation Rooms	• FHA: New intercoms trialed at SMH.Use of iPads, baby monitors etc. a number of differing strategies.			X			X			Safety	Returning to Health and Wellness

Promising Initiative	Description/ Comments	BCEHS ALL HAs	IHA	FHA	NHA	VCHA	VIHA	PHSA	FNHA	Dimensions of Quality	Area(s) of Care
Use telephones in ED Patient Rooms						X	X	X		Safety	All
Staff & Patient Experience											
Virtual Homecare & Doctors Visits	• Homecare and doctor visits that take place virtually via video platforms or telephone calls. • IHA: Used widely across IH by nearly all specialties.		X	X	X		X	X		Respect, Safety, Accessibility, Appropriateness, Equity	All
Emergency Tele-Health Mental Health	• FHA: Used more frequently in remote sites, i.e. CGH/FCH.			X				X		Respect, Safety, Accessibility, Appropriateness, Equity	All
Tele-Health	• The use of communication technologies, such as computers and mobile devices, to access health care services remotely.				X		X			Accessibility	Strengthening Health and Wellness, Returning to Health and Wellness, Living with Illness or Disability
ROSe and RUDi telehealth consultations	• **ROSe** (Rural Outreach Support) - Intensivist/critical care specialists are available 24/7 by Zoom, mobile app, and phone to support rural healthcare providers looking for a consultation, second opinion, or ongoing virtual support for patients. • **RUDi** (Rural Urgent Doctors in-aid) - Physicians with emergency medicine and rural experience are available 24/7 by Zoom and phone to support rural healthcare providers looking for support with a patient. • IHA: Available – usage was low • PHSA: Use CHARLiE as well (Child Health Advice in Real Time Electronically)		X	X	X	X		X		Efficiency	Returning to Health and Wellness
Split and Soft Roll Cast				X						Safety	Returning to Health and Wellness

Promising Initiative	Description/ Comments	BCEHS ALL HAs	IHA	FHA	NHA	VCHA	VIHA	PHSA	FNHA	Dimensions of Quality	Area(s) of Care
Development/normalization of physician sick call process	• Developing or normalizing the physician sick call process through a central structure, often through the scheduler.				X	X		X		Efficiency	All
Staff recognition	• IHA: Most encouraging was that which came from the community.		X		X	X				Respect	Strengthening health and Wellness
Rapid Knowledge Translation											
Adapting simulation exercises for education and rapid adoption of new approaches	• IHA: Individual Hospitals rolled out simulation exercises. Our HART teams were very involved in SIMs in the rural communities.		X	X	X	X	X	X		Safety, effectiveness, Efficiency	All
Increased understanding of how to use PPE	• IHA: This was a highly need but disjointed effort to unify the ranks to one standard. The eventual document is very well laid out. The systemic appreciation and understanding of PPE has grown immensely.		X	X	X	X	X	X		Respect, Safety, Effectiveness, Efficiency	All
First Nations Doctor of the Day resource	• Enables members of BC First Nations with limited or no access to their own doctors to make virtual appointments. This enables more First Nations people and their family members to access primary health care closer to home.								X	Respect, Accessibility, Appropriateness, Equity, Efficiency	All
Operational Initiatives											
Collaborative Governance											
Enhanced communication between executive and front-line physicians	IHA: Excellent Engagement both ways.		X		X	X	X	X		All	All
COVID and Emergency Response Division	• The Ministry of Health has established a COVID and Emergency Response Division. • IHA: The EOC and the CMWG for IH have been invaluable tools to our response.		X	X	X		X	X		Safety, Effectiveness All	All
Establishment of Health Authority Resources and Teams to provide clinical support for interfacility transfers	• CERT in VIHA • CCRN in NHA				X		X			Safety	Returning to Health and Wellness

Promising Initiative	Description/ Comments	BCEHS ALL HAs	IHA	FHA	NHA	VCHA	VIHA	PHSA	FNHA	Dimensions of Quality	Area(s) of Care
Extensive partnering with provincial and national partners	• Extensive partnering with provincial and national partners to ensure optimizing care practices, pathways and resources, enhanced communication pathways and sharing of knowledge/learning, consistent messaging, and providing evidenced-based care.				X	X		X	X	All	All
Development of Business Continuity Planning and action logs with internal partners	• Development of Business Continuity Planning and action logs with internal partners (i.e. facilities, corporate services, other) have been great exercises for Operations and Collaborative Practice as we prepared for the global CoVID-19 pandemic. This will be revisited quarterly moving forward (FNHA).								X	All	All
Rollout of a provincial framework to help people living in rural, remote and Indigenous communities in B.C. access critical health care					X	X			X	Accessibility, Equity	
Rapid Knowledge Translation											
Real-time COVID Dashboard	• Various dashboards, mostly HA specific.		X	X	X		X			Efficiency, Safety	All
Regular updates of ED volumes, regional COVID cases, ED COVID prevalence				X	X	X				Efficiency, Safety	All
UPCC COVID testing and volume data to coordinate community and ED care				X	X	X		X		Accessibility, Efficiency	Returning to Health and Wellness
Knowledge Translation with Paramedics		X								Safety	Returning to Health and Wellness
Patient Flow & Surge Capacity											
Day-to-day approach for hospital decongestion	• IHA: Involved many layers of Admin and Operations. However, very effective at reducing hospital occupancy rapidly.		X	X	X	X	X	X		Safety, Effectiveness, Efficiency, Accessibility	Returning to Health and Wellness

Conclusion

This report captures lessons learned for emergency health services from the experience of the COVID-19 pandemic in British Columbia, highlights nine initiatives that have been particularly important and should be maintained or expanded, and provides a number of recommendations to health authorities and the Ministry of Health stemming from these initiatives. It also provides an inventory of over thirty other beneficial initiatives that may be of use to health authorities that have not yet implemented them.

In conducting the RLR and producing this report, ESAC is fulfilling its mandate to provide advice and recommendations with the goal of improving emergency care in accordance with the dimensions of quality. The implementation of the initiatives and recommendations outlined in this report requires funding and resource allocation decisions on the part of the Ministry of Health and health authorities which are beyond the scope and authority of ESAC, and the recommendations made in this report are not binding. Rather, they are intended to provide a potential roadmap for building emergency care back better, both in the context of the second wave of COVID-19 as well as for the long term.

Appendix A – Detailed Methodology

In planning, designing, and conducting the Rapid Learning Review, ESAC leveraged the support and experience of the Ministry of Health's Health Innovation Hub and Reos Partners. The Health Innovation Hub works to enable the development of policy and creative solutions through collaboration and co-creation by providing centralized access to resources, services and training. Reos Partners is a consulting organization with over 20 years of experience in designing, facilitating, and guiding processes that enable teams of stakeholders to make progress on their challenges using a systemic, collaborative, and creative approach.

A Rapid Learning Review is similar to an After-Action review, with the primary difference being that it is undertaken while an event or initiative is still underway, and adjustments are made in real-time iteratively rather than post-event. The results of an RLR are documentation of systemic lessons, practical insights and actions to assist in the application of the next steps and to guide the path forward. Critical knowledge is identified by asking system stakeholders questions such as what is being learned through the response to COVID-19, what is being more valued, and what is not working and needs to be changed or stopped? The COVID-19 RLR was focused particularly on identifying what initiatives have were most beneficial during the first wave of COVID-19 and which would be helpful for a second wave and in order to "build back better."

With the support of the Health Innovation Hub and Reos Partners, the ESAC COVID-19 Rapid Learning Review was conducted between June and September 2020. Beneficial initiatives were identified and captured through a variety of methods, including:

- Surveys
- Two virtual workshops
- Prioritization
- Codification

These methods were used to identify and create the content for this report, outlining an inventory of initiatives taken across BC's health authorities and highlighting the most important of these initiatives as identified by ESAC.

Surveys

As a starting point for this work, ESAC members were asked to complete a survey identifying changes, new approaches, and lessons learned from COVID-19. Participants were asked:

- How were you (and your team) required to work differently to effectively respond to COVID-19 (i.e. new practices/behaviours or practices/behaviours that were let go of)?
- What new, promising approaches for delivering healthcare have emerged in the last 3 months that may not have emerged without COVID-19?
- Given what you have learned, what are the implications for what emergency services need to stop doing?
- Given what you have learned, what are the implications for what emergency services need to start doing?

- Given what you have learned, what are the implications for what emergency services need to keep doing?

The results of these surveys were used to inform two virtual workshops to build out the learning, identify beneficial initiatives, and prioritize and codify them.

Virtual Workshops

Two virtual workshops were facilitated by Reos Partners and the Health Innovation Hub on June 19th and July 21st, 2020. The first was aimed at creating a list of beneficial initiatives that had surfaced during the course of the COVID-19 pandemic and beginning the work of prioritizing them, while the second continued and completed the prioritization of these initiatives and began codifying the most important of them. The workshops consisted of a mix of plenary discussion and facilitated small-group breakout workshops, using tools such as virtual whiteboards to sort and organize ideas and facilitate group discussion. The structure of each workshop is outlined below.

Workshop 1

- Welcome and framing
- Check In: *When thinking about how emergency services have responded to COVID-19, what is your "proudest proud"?*
- What Innovations Have Emerged?
    - **Purpose:** to identify what emergency services innovations have emerged during COVID-19
- Introduction to the Iceberg Model for System Thinking
    - **Purpose:** to introduce the concepts of 'systemic structures' and 'mental models' as important leverage points for system change
- How Did We Work Differently?
    - **Purpose:** to identify shifts in ways of delivering health care and what made those shifts possible
- What are the Most Promising 'Whats' and 'Hows' to Take Forward?
    - **Purpose:** to get a pulse-check on promising innovations
- Check Out / Next Steps

Workshop 2

- Welcome and framing
- Check In: *If I could offer us one piece of advice for how to spread learning and innovation across BC emergency services, it would be...*
- Reminder of the Promising Innovations Identified So Far
    - **Purpose:** Review of clinical and operational innovations identified from survey and workshop 1
- Criteria for Selecting Promising Innovations
    - **Purpose:** Present proposed criteria to the group
- Selecting Promising Innovations
    - **Purpose:** breakout group work to identify promising innovations that should be recommended for standardization, followed by a plenary discussion to see how all groups sorted the promising innovations

- Case Clinics and Documenting the Recommended Innovations
    - **Purpose:** to begin documenting/codifying the most important initiatives identified

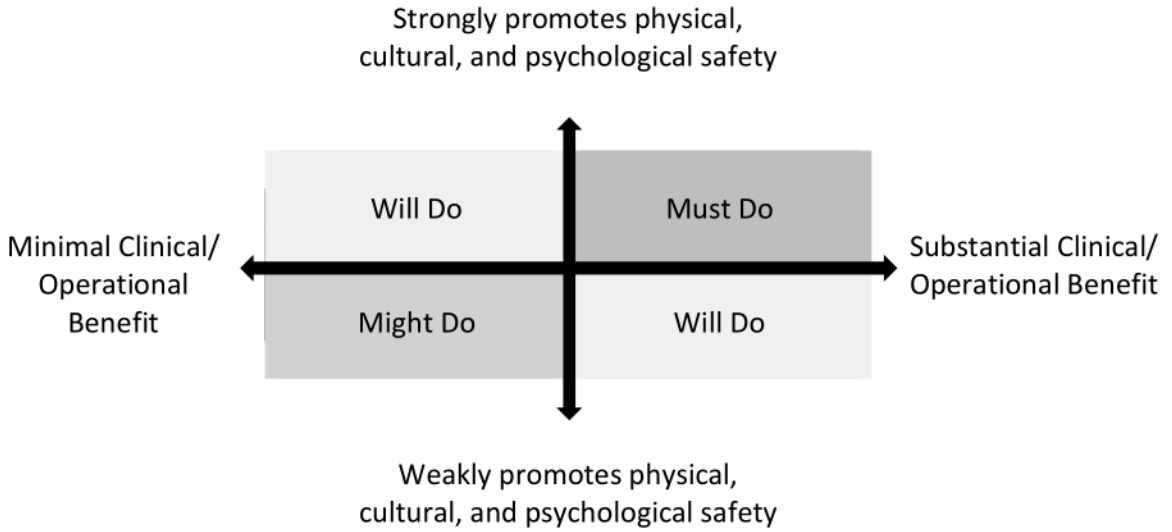
Prioritization

As part of the second virtual workshop, the initiatives were prioritized to identify which were the most important to standardize or use across all health authorities. In order to accomplish this, a number of considerations were applied to the initiatives:

- Clinical
- Operational
- Physical Safety
- Cultural Safety and Psychological Safety

To assist with the prioritization of the initiatives, the RLR planning team, consisting of the ESAC co-chairs, Reos Partners, and MoH staff, developed a 2x2 priority matrix based on an IHI tool (Appendix C) that links psychological safety/empathy with more traditional measures of clinical and operational benefit. However, a key consideration for the planning team was the importance of incorporating cultural safety and humility into the prioritization of initiatives.

While the IHI tool focused on psychological safety, the priority matrix for the RLR used the BC Health Quality dimension of safety; this includes cultural safety and physical safety alongside psychological safety, and is defined as the extent to which services prevent or minimize harm that could unintentionally result from the delivery of care, and the extent to which they promote trust. Thus, the Y-axis of the tool was the extent to which each initiative promotes physical, cultural and psychological safety, while the X-axis was the extent to which it results in clinical or operational benefits. As part of the development of this tool, input was sought from the Ministry of Health's Office of Indigenous Health and from FNHA.



Discussion of this tool at the second workshop sparked debate about the appropriate location for physical safety (harm), and whether it should more appropriately be mapped along the axis of clinical benefit or, as in the 2x2 tool, be incorporated into the same axis as cultural and psychological safety. There was also discussion around the measurement of promotion of cultural safety, and whether initiatives may still fall within the "must do" quadrant if they did not have a strong cultural safety component; however, given the limited time available at the workshop, the tool was used as presented above.

Initiatives were also mapped to the applicable dimensions of the BC Health Quality Matrix. The matrix provides a common language and understanding of quality. The Matrix can be used to develop metrics that comprehensively measure quality across seven Dimensions of Quality and five interconnected Areas of Care. By providing a shared definition of quality for BC, the Matrix supports a coordinated approach to thinking and learning about these dimensions and areas, how they relate to one another, and what everyone's responsibilities are throughout a person's health and wellness journey.

Codification of Promising Initiatives

Following the conclusion of the two virtual workshops, the nine most important initiatives (as identified in the prioritization exercise) were codified. A codification template was developed by the RLR planning team and calls were set up with ESAC members and health authority subject matter experts to discuss the initiatives, ensure there was a common understanding of the initiative (and/or its component parts), and capture the information. The codification template included the following questions:

Summary of the Initiative

1. Answer the question that's most applicable to this initiative: What entrenched problem in emergency services does this initiative respond to? OR What unrealized opportunity does this initiative respond to?
2. Who is impacted most by this initiative? How might it impact different populations or patient groups differently? i.e. using an equity lens
3. What is an estimate of the impact the initiative will have if fully implemented in the following outcomes: morbidity, mortality, patient satisfaction, provider satisfaction?
4. What early evidence exists that this initiative is successfully responding to the problem or opportunity (i.e. anecdotal evidence, health administrative data, pilot data, relevant evidence from other jurisdictions, etc.)?

Details of the Initiative

5. How does this initiative work? What would the essential components of the initiative be?

6. What resources are needed to implement this initiative? Estimate the budget, staff, time, and/or equipment needed. How does this compare to resources used if this initiative were not implemented?

Sustainability and Spread

7. What current rules, regulations, principles, or habits have been or might need to be 'paused' or changed to enable this initiative to happen?
8. Answer the question that's most applicable to this initiative: What barriers have you encountered implementing this initiative, and how did you overcome them? What might get in the way of this initiative being adopted elsewhere? OR What barriers do you think might be encountered if someone implemented this initiative, and how might they overcome them?
9. What further evidence do you think may be needed for this initiative to be adopted across BC?
10. How can this initiative be improved going forward?

The availability of information varied from initiative to initiative, particularly in areas such as early data and evidence showing the impact of the initiative and estimates of the budget, staff time, equipment, etc. required to implement the initiative.

Appendix B - Crowding in BC Emergency Departments (2018 Report)

ED Crowding Report_2018_Final.pd

Appendix C - A Tool to Promote Psychological Safety During and After COVID-19

A Tool to Promote Psychological Safety [

Provincial Health Services Authority

Health Improvement Networks Introductory Overview

September 22, 2022

Continuing to move forward - together

Provincial Health Services Authority

- Before COVID-19 and throughout the pandemic linkages between clinicians and administrators have come together informally and formally.
- ESAC : a committee of the ministry looking at health services
- Emergency Medicine Network ("EMN"): network of practitioners sharing resources
- BC Patient Safety and Quality Council - Critical Care network: renamed Critical Care Advisory Committee very active during COVID-19
- Value from the work being completed
- Different roles, different membership, different governance structures and different levels of support

Health **I**mprovement **N**etwork's (HIN's)

Provincial Health Services Authority

- A Health Improvement Network (HIN) is a **network of provincial partners** created to drive improvement across the BC health care system and ultimately optimize health outcomes and achieve the quintuple aim.
- A HIN works to **improve the equitable delivery of and experience of health services** for patients within a particular population or disease group.
- HINs **enable province-wide monitoring** of the health and health services through the development of provincial datasets, available provincial data systems
- HIN's **support strategic implementation planning** for group-identified system-wide improvements, innovation and the advancement of research and training in those areas of focus.

Provincial Health Services Authority

Goals of a HIN

With respect to the **specific population or disease/condition or service**, a HIN:

- Reduces unwarranted variation in health service across BC
- Supports improved allocation of resources across the health care system
- Improves province-wide capacity and value
- Supports multi-disciplinary providers in the delivery of high quality services
- Facilitates the use of and contribution to science
- Improves health outcomes and patient/person experience

Examples of core functions:

The network will undertake…

Provincial Health Services Authority

- Strategic planning of holistic health services with a focus *across* health authority boundaries and in support of regions
- Informing the appropriate distribution of services across the province based on the tiers of service
- Collating and analyzing province-wide data to enable proactive health system intelligence to improve services and care
- Supporting province-wide research and training with partners.
- Identifying care and service improvement and innovation opportunities from data and evidence as well as the input of clinicians, administrators and patients
- Operationalizing agreed upon system-wide improvements through supported efforts across B.C. which includes knowledge translation and change management
- Supporting urgent operational challenges if/as required/upon request

Provincial Health Services Authority

Supporting Governance for HIN's

- *Provincial Steering Committee*
  - Provides advice/recommendation on HIN functions to the leader/s of the HIN to enact on behalf of partners
  - Typically involves physician and administrative leaders from the HIN's field from each health authority, the academic relevant department/division head, relevant community partners & senior scientific leader

- *Provincial Quality Committee (section 51)* May be embedded in function of the Steering Committee or be stand alone depending on HIN size and role.
  - Reviews key quality metrics, monitors key improvement initiatives and supports province-wide reviews as required

Supporting Governance for a HIN cont'd

Provincial Health Services Authority

- *Advisory Committee per HIN (optional)*
  - Patients and community partners provide advice to the HIN"s Steering Committee
  - Community partners may be on the provincial steering committee as an alternative (or in addition)
- *Working groups* as required
  - Task teams focused on specific initiatives
- Patient involvement is a core principle
- *Core team:* Director/Executive Director, Medical Director, "Leads" for quality improvement and clinical innovation, service planning and evaluation, data and analytics and reporting, scientific linkages
- *Across HIN's and PCP's*: Shared resources, functions and best practices

Current HIN's (and PCP's)

Provincial Health Services Authority

HIN's

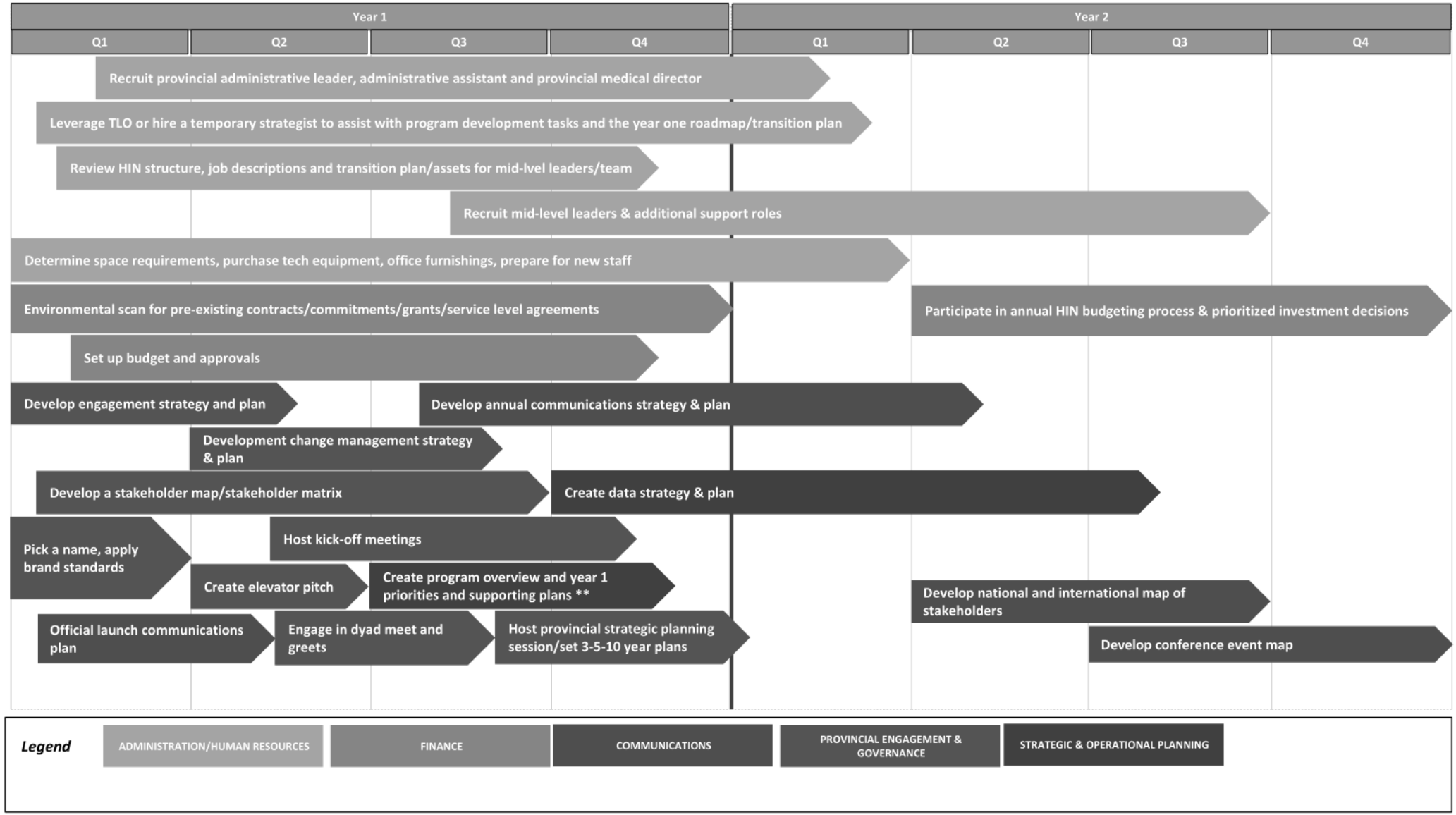
- Stroke Services BC
- Perinatal Services BC
- Child Health BC
- Trauma Services BC
- Cystic Fibrosis Care BC
- PICNet
- Critical Care BC
- Emergency Care BC
- Pain Services BC (name to be confirmed)

Provincial Clinical Programs

(= HIN + commissioning of funds)

- BC Renal
- BC Transplant
- Cardiac Services BC
- TransCare BC
- PC-ICCN (time limited)

HIN Start Up Schedule – General approach for tailoring



How does this relate to the task at hand?

Provincial Health Services Authority

- The establishment of the HIN structures for emergency services and critical care is underway.
- Transitions for and from existing roles and contracts is being planned
- … will be ready to be a landing place to support ongoing work from this group's important fall and winter planning work and will start building bridges immediately as the work evolves.

Questions?
Discussion?

Why are emergency departments failing?

(*and what can we do about it?)*

Grant Innes, MD

~~ED Overcrowding~~ Healthcare Access Block

Primary Care Access block:

Emergency Access Block: An 80 year-old woman is transported to a tertiary ED when her husband cannot wake her up in the morning. She is triaged to an EMS hallway.

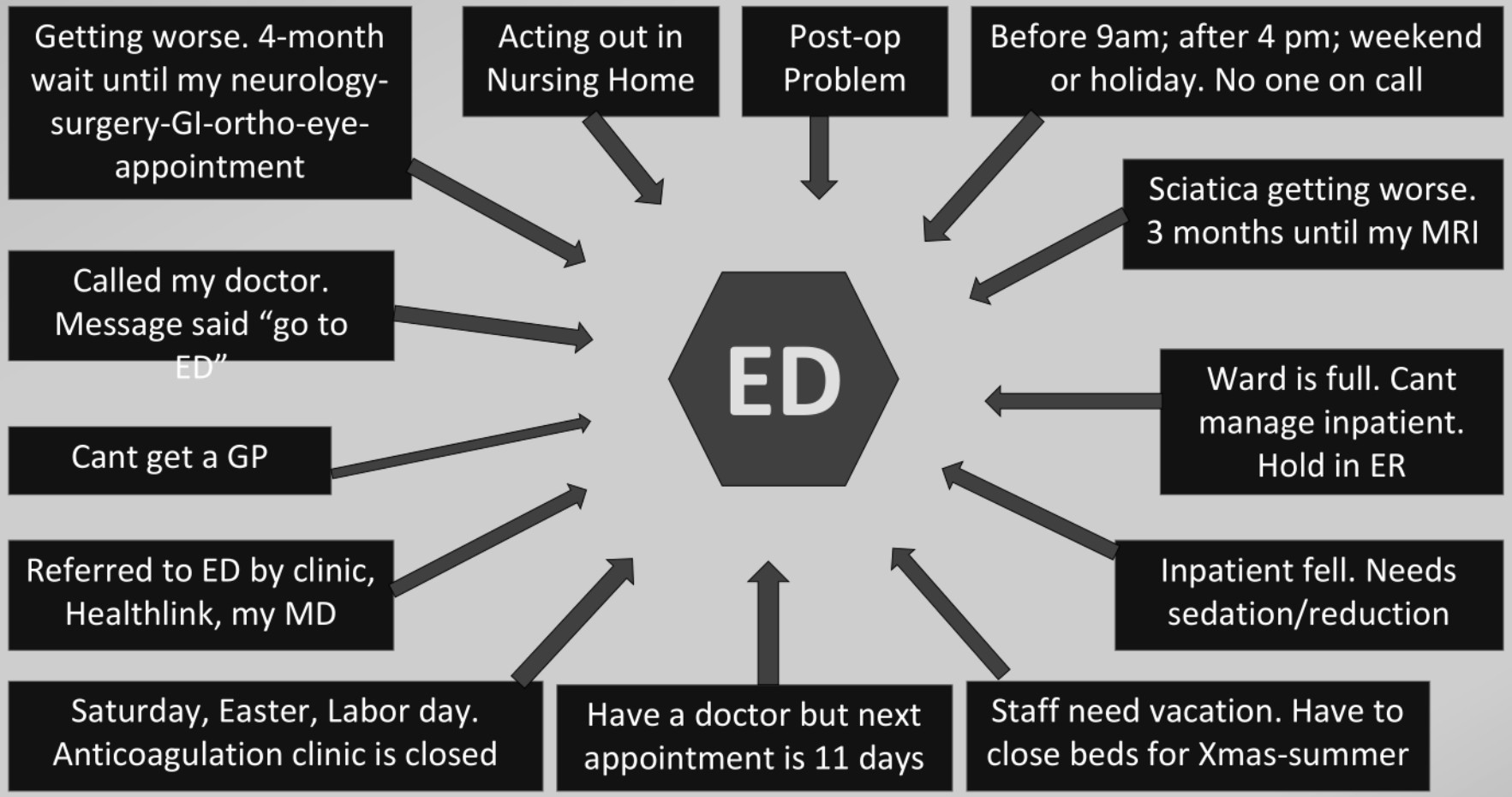
Hospital (Acute Care) Access block:

Community/LTC access block: An 88 year old man is hospitalized with pneumonia. He recovers from his acute illness and is a candidate for rehab but no beds are available. He cannot go home because he is oxygen dependent and getting weaker.

Canadian Healthcare: Second to none!

- Next to last among OECD countries for access to primary care.
  - Many Canadians can't get a family doctor.
  - Those with a doctor can rarely get same-day, next-day or after-hours appts.
- Worst for access to specialists, elective surgery, advanced imaging.
- Canadians have the highest rate of ED use in the First World.
- ED visits are rising rapidly, usually because the ED is the only place patients can get care when they need it.
- Many contributing causes, but the root cause is accountability failure

EDs are failing (largely) because the system is failing



Access block: a solution, not a problem

- Blocking access is a default response and primary coping mechanism for most programs, including emergency departments.
- It is the antithesis of a solution, but delivers large rewards:
  - Workload is controlled,
  - Waiting patients are out of sight and out of mind,
  - Staff stress is relieved and budgetary challenges mitigated.
  - Care shortfalls become someone else's problem
  - The ED is protected from evolutionary stressors that would otherwise mandate innovation and improvement.
- If you can manage care shortfalls by closing the front door, you no longer have a (demand-capacity) problem and you don't need a solution. Flow-access initiatives become unnecessary and are likely to fail.

Blocking access is problematic on three levels

1. It prevents patients from getting the care they need.

2. It shifts care demands away from programs that ***can*** provide a service to programs that can't.

3. It displaces the consequences of access failure to other programs.

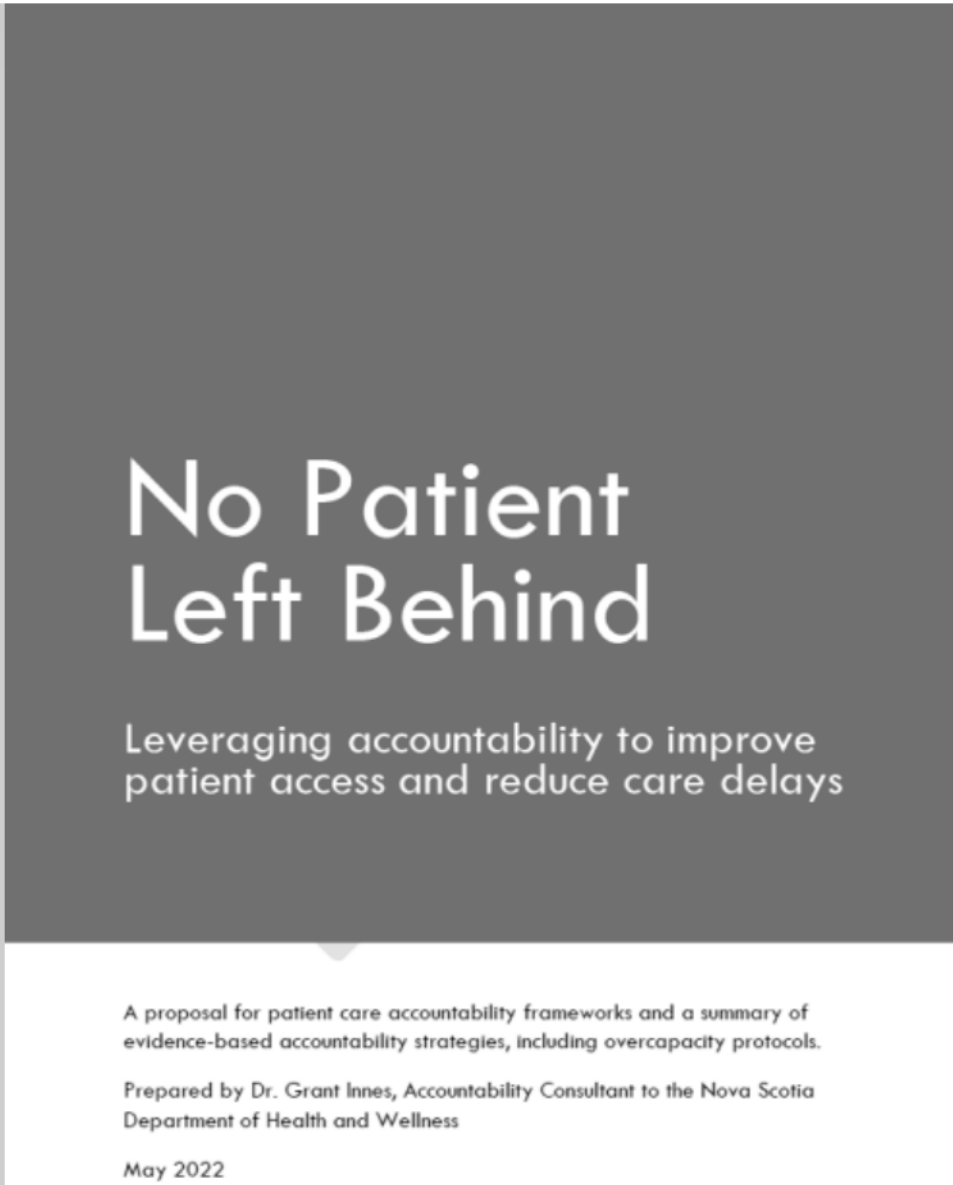
If management by blocking access is acceptable (and consequences are expressed remotely from causes):

- leaders who can address root causes are protected from having to do so,
- leaders most affected (and motivated) cannot address the root causes.

This formula assures ongoing system access failure

<u>Accountability Failure</u>: “A system-level failure to define care expectations and a lack of planning to address care gaps”

- Without an ***accountability framework***, any performance is acceptable.
- If no person or program is expected to solve specific access blocks, no one solves them
- Accountability is the evolutionary stressor required to drive necessary system change.



Programs are designed for the work they do

- EDs are designed to provide diagnosis, resuscitation and management of acute injury or illness over minutes to hours;
- Surgical programs manage surgical conditions over days or weeks,
- Rehab programs are designed to optimize long-term functional recovery
- The best patient patient outcomes and system efficiencies occur when care is delivered by the right providers in the right place (appropriateness).

Acute care hospital wards do not provide excellent rehabilitation.

EDs do not provide quality mental health care.

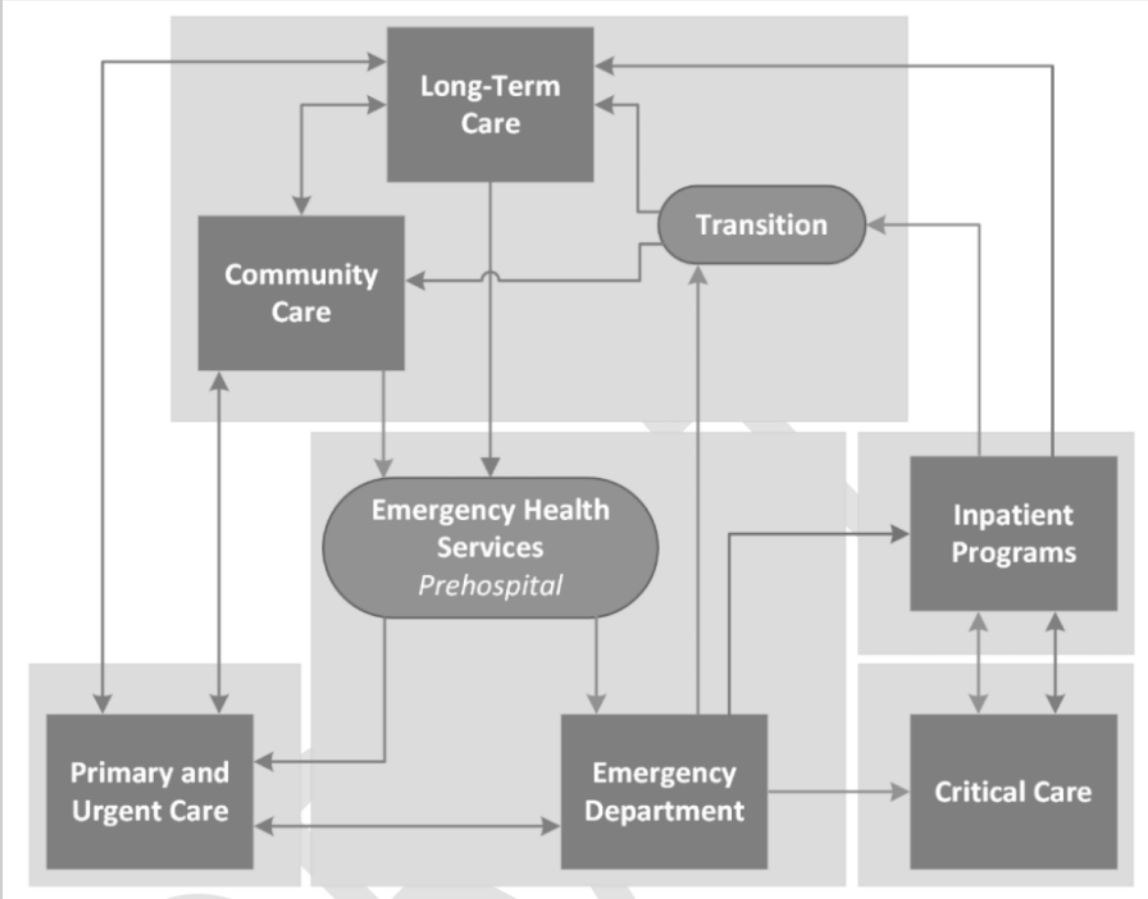
Right care-right place is a primary goal for all health systems

Program structures define accountability zones

-Who is responsible for which patients?

Every patient has a home; every program is accountable to a population.

Where do we look for solutions when access fails?



Blue Box = Program.
Grey Box = Accountability Zone

Accountability frameworks define accountability

Patient care accountability:

-Timely patient assessment and disposition;

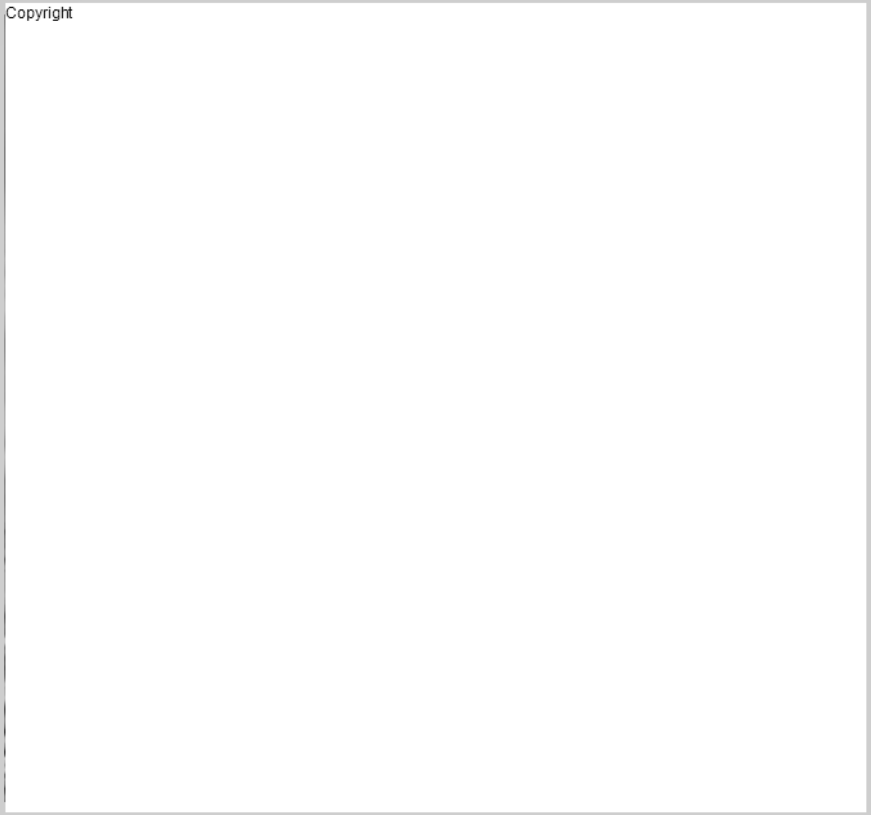
-Budget, space and nursing care for program patients;

-Contingency plans for managing surges and queues

Goals of an accountability framework:

- Provide the right care in the right place
- Move patients out of queues and into care

Accountability in Healthcare?



Emergency Department Accountability

- EHS accountability ends at the time of ED triage. Patients on EHS stretchers fall within the ED accountability zone.
- EDs should adopt a “no patient left behind” mentality: Patients should be triaged IN to care areas, not OUT to external waiting rooms or hallways.
- ED accountability strategies include advanced triage, matching care provision to need, adding resources at bottlenecks, unloading bottleneck servers, triage and reverse triage, and others.
- Intake and rapid assessment zones are excellent high-flow options to divert patients away from RN-staffed stretchers, the 1^{o} ED bottleneck resource.

Inpatient Program Accountability

- Admitted patients in the ED fall into the inpatient accountability zone. Inpatient programs are responsible to care for these patients rather than leaving them in ED stretchers.
- Inpatient accountability strategies include:
  - modifying care allocation (triage, reverse triage),
  - accelerating flow,
  - managing demand (smoothing),
  - matching demand & capacity,
  - adding intake or queue management options (CDU, MAU),
  - Increasing efficiency, reducing LOS, and optimizing discharge processes.

ED boarding (blocking admitted patients in ED stretchers)

- **#1 flow constraint,**
- **#1 cause of ambulance offload delays,**
- **#1 threat to emergency care access, and**
- **#1 operational priority for First World EDs.**

Until this constraint is addressed, other efforts to reduce waiting times and ambulance offload delays will have little success.

Accountability (access and flow) targets

-Ambulance offload time in the emergency department:	30 minutes
-Time to ED triage:	10 minutes
-Time to ED physician, stratified by CTAS acuity:	0–120 min
-ED length of stay (LOS) for discharged patients:	4 hours
-Consultation interval (referral to disposition decision):	2 hours
-Inpatient transfer delay (admission order to transfer):	2 hours
-Mean hospital discharge time (w scheduled departures)	11:00 am
-Actual LOS/Expected LOS:	96%
-Hospital beds occupied by ALC patients:	<4%
- ALC time from long-term care referral to transfer:	7 days

Accountability is hard!

The 1% solution to ED high acuity access

- Study of 1.8 million ED arrivals at 25 hospitals in 12 Canadian cities
- Hi-acuity access gap = # of arriving CTAS 1-3 patients x average wait time to reach an ED care space.
- Median 462 beds/hospitals (>4 million bed hours / hospital / year).
- Average ED high-acuity access gap =46,000 hours / site / year.
- ED access gap = 1.14% of inpatient capacity
- This gap could be eliminated by a 90-minute reduction in average inpatient LOS
- If viewed as a “whole hospital problem,” access block could be largely mitigated by modest efficiency gains with or without new capacity

“No Patient Left Behind”

(challenge posed to 3 Calgary emergency departments)

“How would you change your systems if it is no longer an option to send sick patients back to the waiting room?”

“How would you change your systems if it is no longer an option to block admitted patients in an emergency department?”

“How would you change your systems if it is no longer an option to block ALC patients on an acute inpatient unit?”

Addressing demand-capacity mismatches

- Plan for “all the patients”—not just those already in care.
- Increase efficiency or reduce lengths of stay.
- Modify the allocation of key resources (beds, people).
- Eliminate low value activities (processes, tests, procedures that do not improve patient outcomes). These account for significant utilization.
- Manage demand and smooth variability (e.g. surgical scheduling).
- Match care provided to care required. Don’t over/undertreat.
- Focus on the front-end. Improve triage and reverse triage processes.
- Add resources at bottlenecks. Unload bottleneck servers.
- Rethink provider models and enhance coverage.
- Develop queue management strategies and surge contingency plans.

***Some programs will need more money, beds or providers.**

The law of mass action (“Triage in!”)

- The rate of a chemical reaction is proportional to the concentration of reactants. In healthcare, the rate of a process is proportional to the number of patients queuing in front of it.
- Expediting access despite high occupancy introduces an evolutionary stressor that drives innovation and improvement.
- Timely transfer puts incoming patients in the vicinity of the “right” care providers, reduces treatment delays, reduces patient frustration, improves outcomes and makes inpatient staff aware of patients queueing for their care.
- If programs can address demand challenges by closing the door, leaving waiting patients out of sight, there is no motivation to innovate or improve. Staff develop an illusion of control that reduces the need for adaptation.
- Research shows that patients facing care delays would rather be in inpatient hallways than in ED waiting rooms.

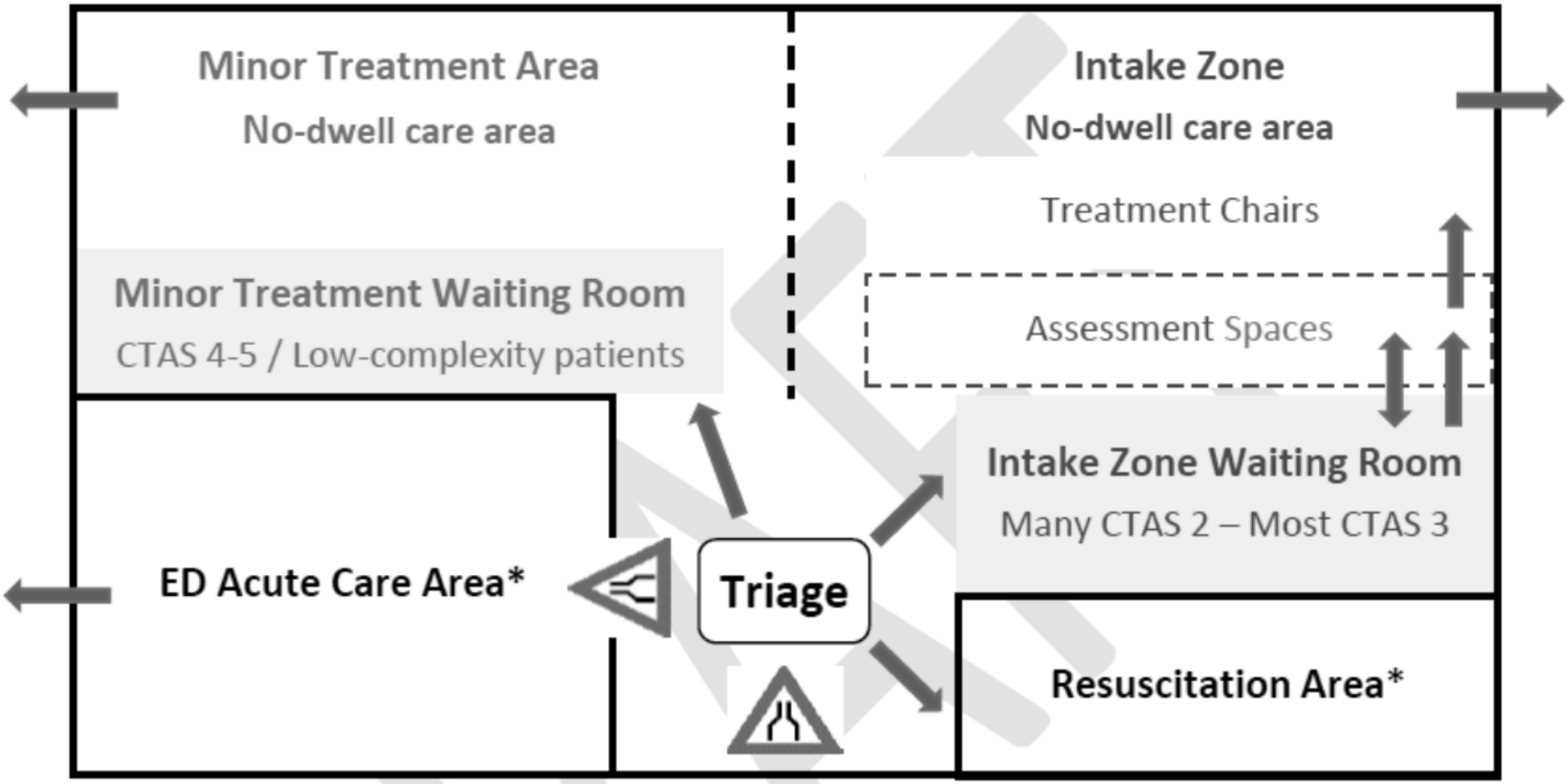
Manage Demand:

- Smooth elective admissions around natural variability. Poorly managed inflow creates demand highs that overwhelm hospital resources and trigger periods of hospital crowding
- Day-ahead demand-capacity matching:
  - Emergency admissions are predictable. Assure units are ready to accept tomorrow's incoming elective patients as well as predicted emergency admissions. The expectation to create inpatient space for anticipated next-day demand is a key accountability strategy.
- Reduce demand on inpatient beds using CDUs or MAUs.

Optimize hospital outflow: Fix discharge processes

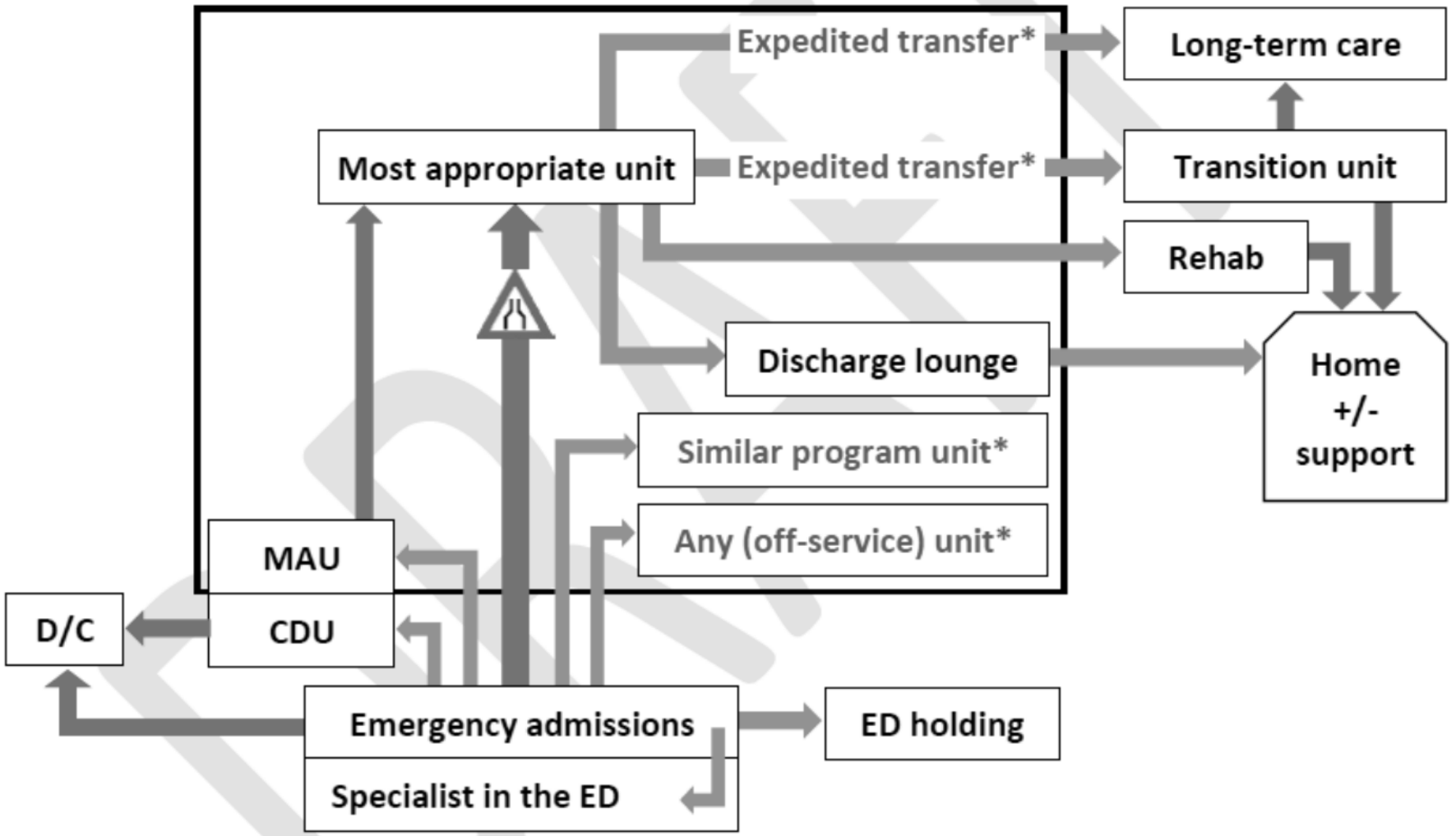
Have a plan: for surges and queue management

Manage demand: Divert patients from bottlenecks



= EHS-ED transition bottleneck and acute stretcher bottlenecks. * = area with acute nurse-staffed stretchers. The minor treatment area and intake zone divert patients from the acute stretcher bottleneck. The **minor treatment area** is a high-volume low-acuity single-system care zone. The **intake zone** is a high-volume mid-complexity care zone.

Manage demand: Divert patients from bottlenecks

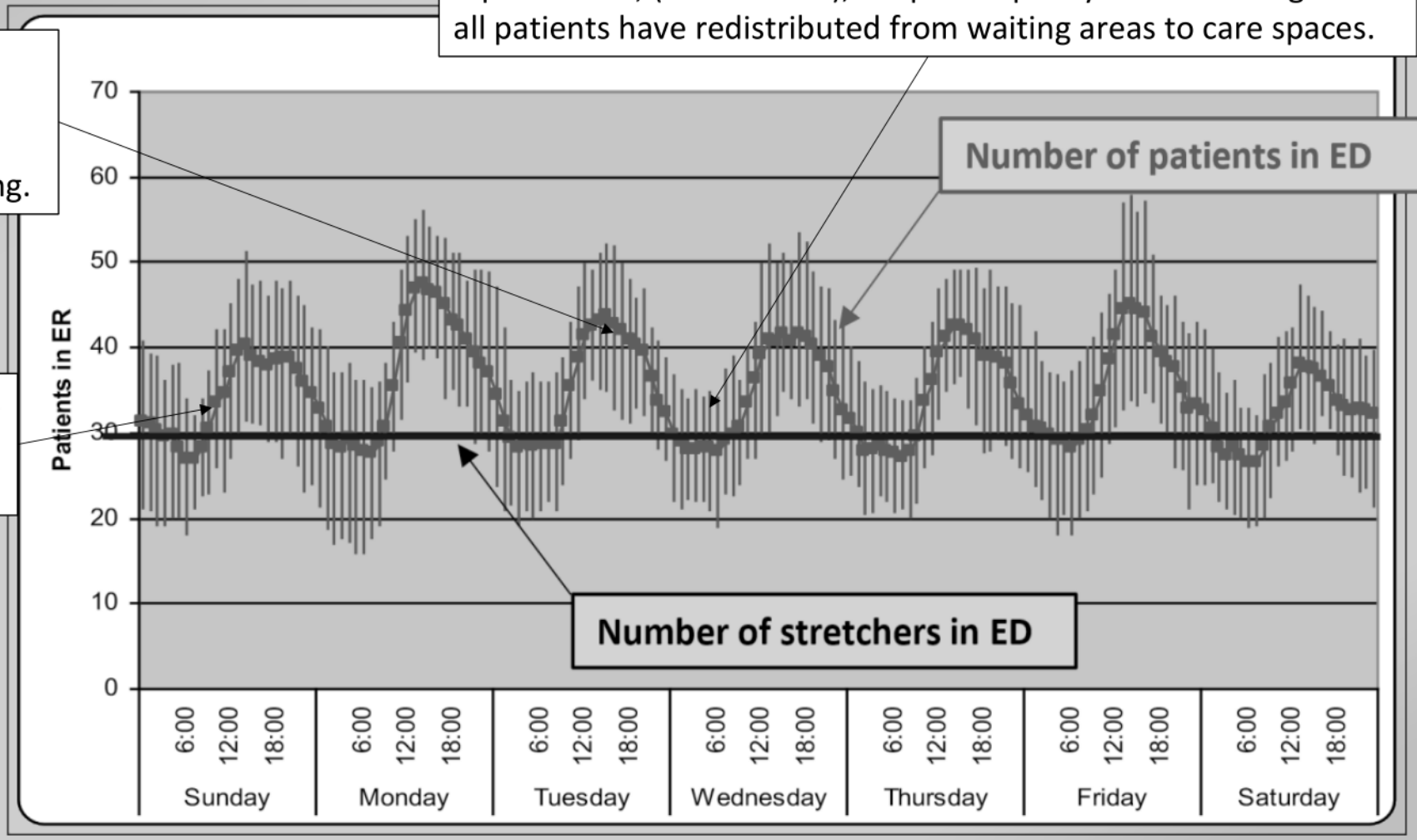


Improve Flow

NIGHT: ED inflow falls. Gradual hospital inflow continues. After equilibration, (i.e. 02-0900), hospital capacity has not changed but all patients have redistributed from waiting areas to care spaces.

EVENING (16-2200): Hospital inflow gradually matches then exceeds ED inflow. The crowd plateaus and begins diminishing.

DAY (09-1600): Inflow exceeds outflow. ED and waiting areas become a war zone



Implement a *demand-driven* overcapacity protocol (OCP)

- The overcapacity protocol (OCP) is a push contingency to be activated when the system is overwhelmed and *pull* processes are failing..
- Most OCPs fail because they are *supply driven*: They identify a few OCP spaces on hospital units and stop inflow when these are full, regardless how many patients need care.
- Units can regain inflow control and opt out of surge responses by delaying discharges and assuring that OCP spaces remain occupied. OCP spaces become permanently occupied.
- Supply driven OCPs compromise flow rather than enhancing it.

Demand-driven OCP (Coles Notes version)

OCP Activation criteria:

1. No acute ED stretchers are available to accommodate arriving emergent or urgent patients, AND

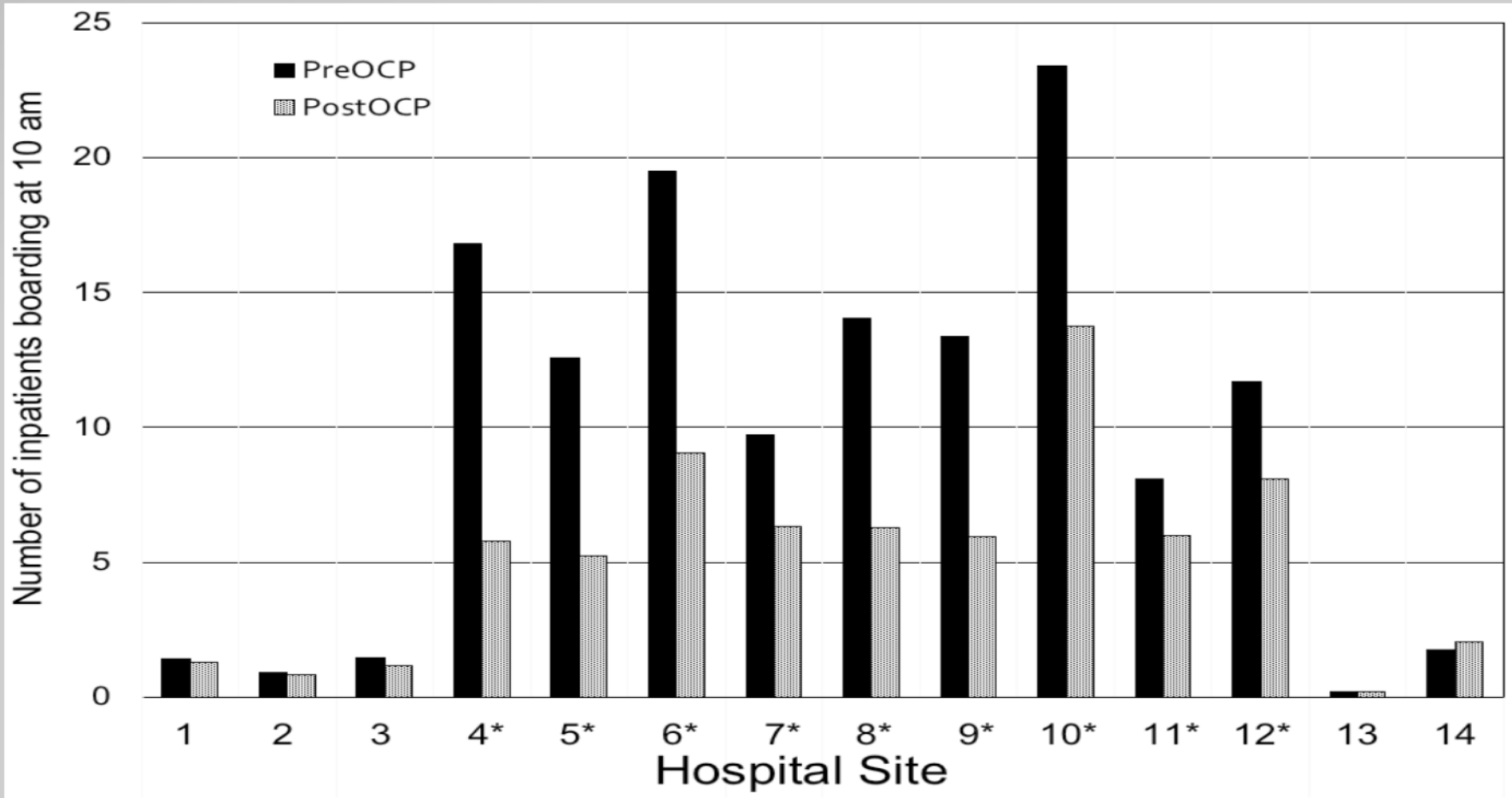
2. ED occupancy (pts in care / staffed care spaces) exceeds 110%; AND

3. The % of acute ED stretchers occupied by admitted patients, patients waiting for consult decision, or waiting for diagnostics exceeds 35%.

OCP Response: When OCP criteria are fulfilled, the most stable admitted patients in the ED will be distributed one-by-one on a no refusal basis, within 15 minutes, to hospital beds or intake spaces on the most responsible inpatient unit.

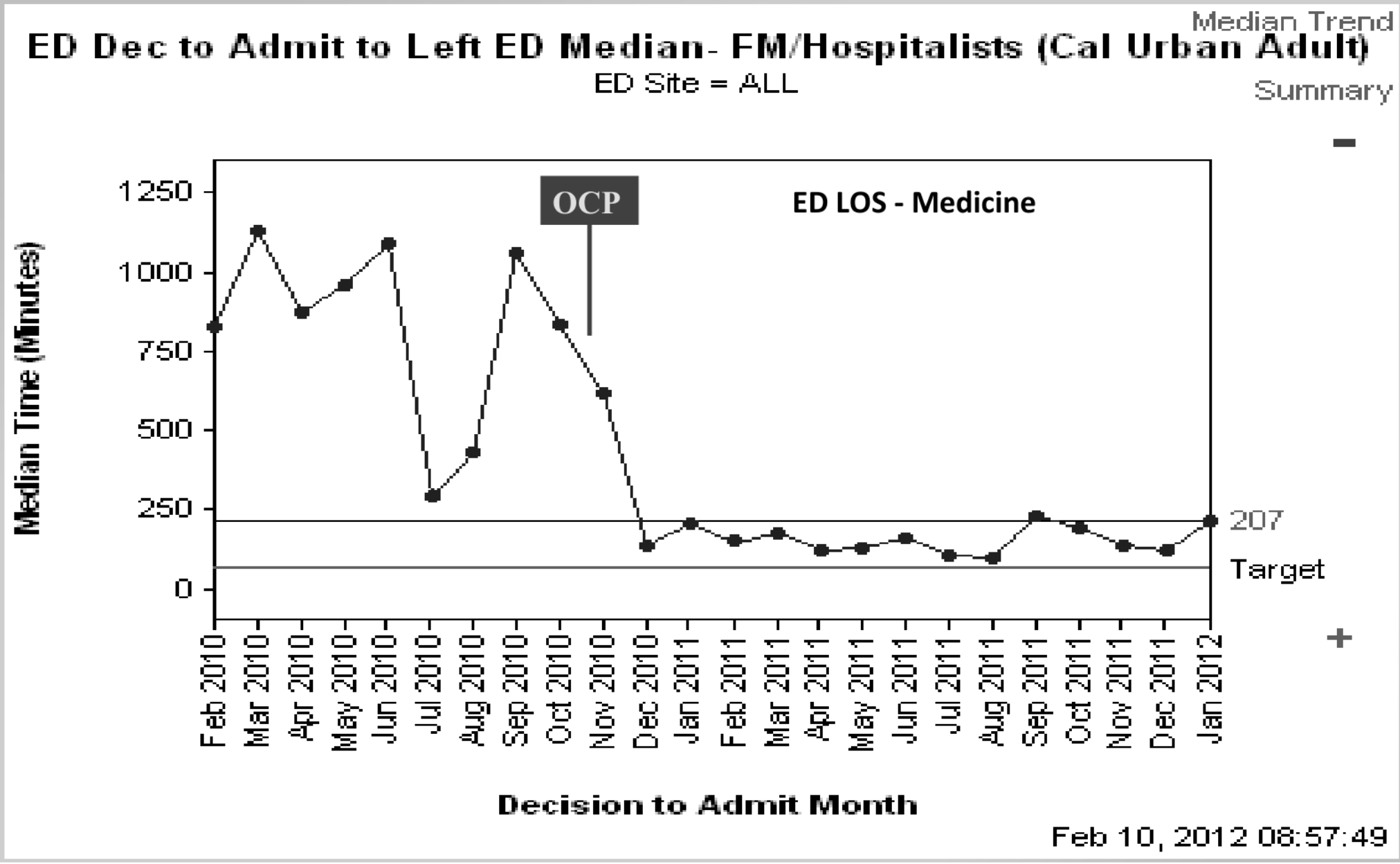
OCP Impact on # of inpatients boarding at 14 hospitals

Note that only 9 hospitals* were suffering access block at baseline.

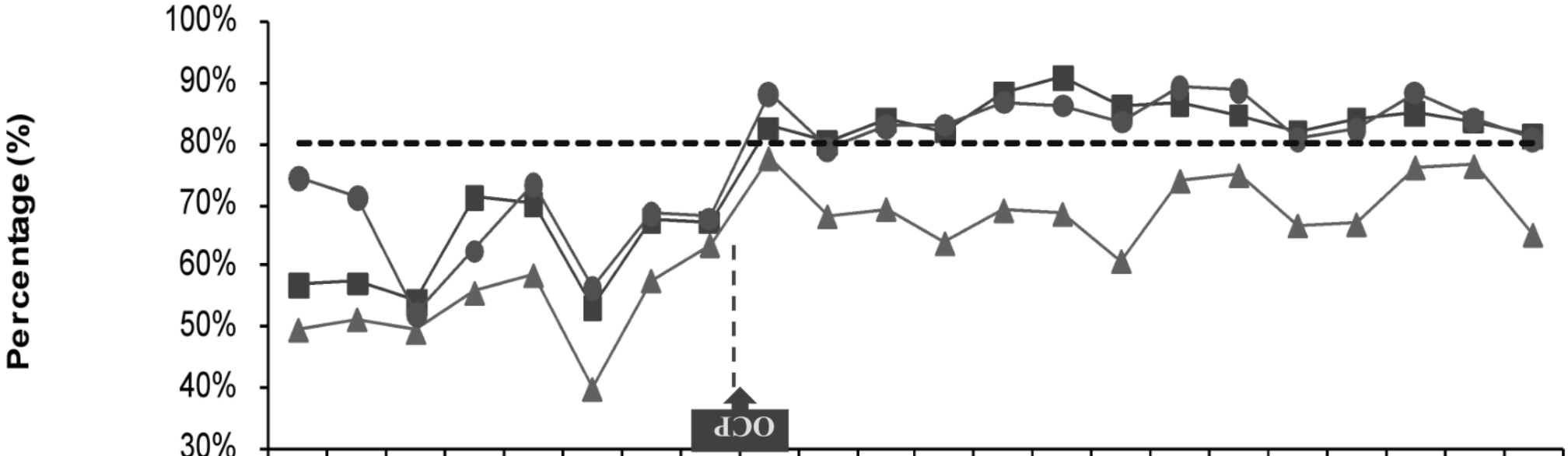


*Innes G, McRae A, Holroyd B, et al. Policy-driven improvements in crowding: system-level changes introduced by a provincial health authority and its impact on emergency department operations in 15 centers. Acad Emerg Med. 2012;19:S4-5

*Innes GD. Accountability: A Magic Bullet for Emergency Care Delays and Healthcare Access Blocks. Healthc Manage Forum. 2018 Sep;31(5):172-177


Median Trend
ED Dec to Admit to Left ED Median- FM/Hospitalists (Cal Urban Adult)
ED Site = ALL
Summary
OCP
ED LOS - Medicine
Median Time (Minutes)
1250
1000
750
500
250
0
207
Target
Feb 2010
Mar 2010
Apr 2010
May 2010
Jun 2010
Jul 2010
Aug 2010
Sep 2010
Oct 2010
Nov 2010
Dec 2010
Jan 2011
Feb 2011
Mar 2011
Apr 2011
May 2011
Jun 2011
Jul 2011
Aug 2011
Sep 2011
Oct 2011
Nov 2011
Dec 2011
Jan 2012
Decision to Admit Month
Feb 10, 2012 08:57:49

% of EMS Transfer of Care within 30 Minutes



	Apr '10	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr'11	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
FMC	57%	57%	54%	71%	70%	53%	67%	67%	82%	80%	84%	82%	88%	91%	86%	86%	84%	81%	84%	85%	83%	81%
PLC	49%	51%	49%	55%	58%	40%	57%	63%	77%	68%	69%	64%	69%	68%	61%	74%	75%	66%	67%	76%	76%	65%
RGH	74%	71%	52%	62%	73%	56%	69%	68%	88%	79%	83%	83%	87%	86%	84%	89%	89%	81%	82%	88%	84%	81%
Target	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

“You can’t just push patients into a full ED/hospital!”

- Blocking undefined & seriously ill patients outside without care is worse.
- When need exceeds capacity, thoughtful care rationing is necessary.

Ethical allocation: Prioritize *patients with the greatest need* and *treatments with the greatest benefit*: resuscitation > rapid identification of critical illness > pain control > acute care > convalescent care > comfort > privacy

- Patients with the greatest need arrive at the front door.
- During care, illness severity (need) and care intensity (benefit) diminish.
- At the back end, where time is in days or weeks, convalescing patients consume more bed and nursing hours while accruing less health benefit.
- Whether the diagnosis is myocardial infarction, hemothorax or hyponatremia, patient need and benefit are front-loaded.

Paradoxical allocation

- Undiagnosed unstable patients with serious illness (among the sickest in the hospital when they arrive) are left in hallways without care, to assure ongoing optimal management for stable patients already in care.
- After they are diagnosed, treated and stable, patients graduate to a room, a nurse, a bed and a toilet.
- Stable treated patients no longer at risk of death or disability and those convalescing or awaiting discharge—even those no longer requiring hospital-based care—occupy the best care locations
- If a stable patient is occupying a semi-private room awaiting a nuclear scan, a rehab bed or a ride home while a patient with undiagnosed sepsis is blocked in a hallway, this is a dangerous resource allocation decision—and incongruent with accepted ethical principles.
- Care maldistribution is common and causes many adverse outcomes

Match care needed to care provided

Triage: Rapidly direct resources to patients with the greatest need.

Reverse triage: Redirect resources away from patients whose need and benefit have diminished.

- Reverse triage can free up substantial hospital resources, improve the balance of care delivery, and reduce delays for many sick patients.
- If a stable patient is waiting for test results in an ED stretcher while another is deteriorating in the hallway, this is bad care allocation.
- If an inpatient remains in a hospital bed waiting for a test result or ride home while another patient with an acute stroke is languishing in a waiting room, this is a bad care allocation decision.

Match care needed to care provided

Focus resources at inflow bottlenecks (i.e. queues):

- This is a basic principle of operational flow management and the most effective way to reduce queues.

The critical front-end resource is clinicians (decision-makers) who:

- Reduce delays for the sickest patients and expedite high-benefit care;
- Mitigate risk and avert disasters by detecting occult serious illness.
- Make patient risk assessments and rapid resource allocation decisions:
  - directing patients to expedited care (e.g., a resuscitation room) if required,
  - preserve scarce resources by removing lower priority patients from the queue or diverting them to more appropriate care destinations.

OCP Mechanism of Action

Accountability: Programs must care for some (not all) of their access-blocked patients.

Improves flow: Forces rapid flow to the "right" unit when emergent and urgent patients are blocked from care.

Appropriateness: Pushes sicker patients out of waiting rooms into care

Evolutionary stressor: Removes ability to solve demand /capacity mismatch by closing the front door. Drives improvement / efficiency.

The goal is to provide access to care—not to empty the ED. OCP has no limits on ED boarding # or time (it is not an "NHS" 4 hour rule)

No Patient Left Behind

Summary of accountability strategies:

- Plan for all the patients, especially those in the queue.
- Move decision-makers forward: The sickest patients are at the front door.
- Look for bottlenecks (queues): Add resources or unload servers.
- Shrink triage. While essential, it is a significant opportunity cost.
- Triage in: rapidly direct resources to patients with the greatest need.
- Reverse triage: redirect resources from patients whose need has diminished
- The law of mass action: Bring patients and providers together.
- Match capacity to known demand. Plan for patients who *will* arrive
- (Almost) no one should own a stretcher.

No Patient Left Behind

Summary of accountability strategies:

- Divert inflow away from acute nurse-staffed stretchers*
- Reduce stretcher dwell time. Fewer IV meds for RNs*
- Unload physicians*. Limit nonclinical tasks and process inefficiencies
- Match MD staffing to expected patient inflow: short shifts, surge shifts, flexible shifts (early call-in or go-home).
- Reduce door-to-doctor and doctor-to-disposition times.
- Eliminate avoidable or deferrable testing
- Don’t procrastinate with disposition decisions.
- Refer as soon as the need is clear. Don’t batch referrals.
- Develop contingency plans for surges and waiting patients

Summary

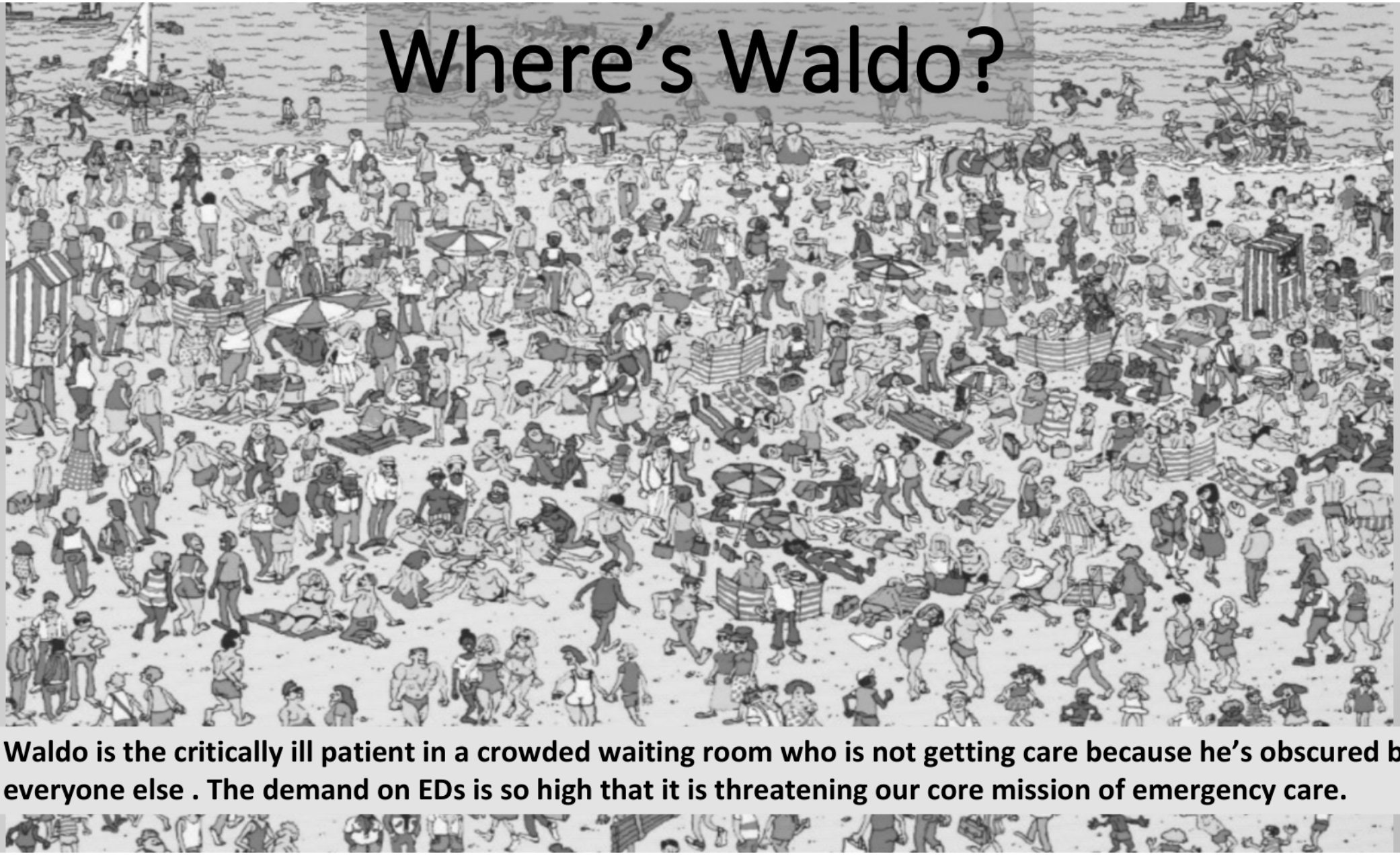
- Healthcare access blocks and growing care queues compromise patient outcomes and cause system dysfunction.
- EDs are the only open door for patients unable to access the right care.
- Lack of program accountability is a root cause of systemic access blocks.
- Accountability frameworks (strangely absent in healthcare) will help move patients out of queues into care, and assure more patients receive the right care in the right place.

Questions?

Additional Calgary data (3 sites)

- Overall system activity (hospital discharges) rose by 10%, from 60.6/site/d to 66.1/site/day
- OCP bed use decreased from 22.9 beds/site/d to 12.9 beds/site/d
- Patients holding in ICU fell from 2.1/site/day to 0.7/site/day
- Patients holding in PARR fell from 1.2/site/day to 0.2/site/day
- Surgeries postponed remained at 0/site/day
- EMS avoidances remained at 0/site/day

Where's Waldo?



Waldo is the critically ill patient in a crowded waiting room who is not getting care because he's obscured by everyone else . The demand on EDs is so high that it is threatening our core mission of emergency care.

Accountability Zones (Help the patient find their home)

- An 88 yr old man waiting for LTC, becoming weaker in hospital and now intermittently confused
- A 75 year old with a fractured hip
- A 68 year-old with chest pain, new onset AF, and an ischemic ECG.
- An actively suicidal 32 year-old
- A 77 year-old with AECOPD and a room air oxygen sat'n of 77%

- Emergency Medicine
- Orthopedic Surgery
- Psychiatry / Mental Health
- Medicine / Hospitalist
- Community / Long-term care

Solution #2: Limit Triage assessments

- Each bedside nurse moved to triage means 4 fewer stretchers

During high inflow periods, consider selective triage:

- CTAS 1: No triage. Go immediately to resuscitation room.
- Patients requiring RN-staffed stretcher undergo typical 2-5 minute triage.
- Minor treatment patients go immediately to registration then MT area based on chief complaint and visual scan. Formal triage deferred to MT RN.
- Patients who can sit and have no apparent life-limb threat go to an Intake area where the lead Intake nurse completes the triage assessment.

Solution #3: Plan for *all* the patients—not just the patient in front of you

- Waldo is hidden in the waiting room. Queue management is the critical component of accountability.
- Considering ALL the patients means changing care allocation processes
- Caring for some patients while leaving others in a queue = Rationing.
- If rationing, prioritize pts with the most need and treatments with the most benefit. *Need = suboptimal health status. Benefit = outcome gain*
- Patients with the greatest need and benefit are at the front door.

Solution #4: Add expertise at the inflow bottleneck

- Adding resources at bottlenecks is a basic flow principle
- The critical front-end resource is physicians who make diagnoses and determine dispositions.
- Decision-makers at the front door:
  - reduce delays for the sickest patients & expedite high-benefit treatments,
  - mitigate risk and avert disasters by detecting unrecognized serious illness,
  - Make rapid risk assessments and resource allocation decisions, directing patients to expedited care (e.g., a resuscitation room) when required.
  - Preserve scarce resources by removing lower priority patients from the queue or diverting them to more appropriate care destinations.

Solution #5: Match care delivered to care required

- We do not use rational frameworks to allocate care.
- Undiagnosed unstabilized patients with serious illness are left in hallways without care because all stretchers are occupied.
- Stable treated patients no longer at risk of death or disability, patients convalescing or awaiting discharge, and patients no longer requiring hospital care are prioritized above acutely ill incoming patients.
- Assuring comfort and privacy for patients who are accruing minimal health benefit while leaving suffering or acutely ill patients in waiting rooms is a maldistribution of care.

Solution #5: Match care delivered to care required

5A. Triage in (not out):

The law of mass action states that the rate of a chemical reaction is proportional to the concentration of reactants. Similarly, the rate of a process is proportional to the concentration of patients queuing in front of it. Triaging ***in*** forces reprioritization of care resources.

***5B. Reverse triage:** Redirect resources from patients whose need and benefit have diminished. Reverse triage frees up substantial hospital resources, improves balance of care delivery, and reduces care delays.

Organize a department retreat (Kaizen). Call it ***No patient left behind***. Ask your teams to brainstorm: "*How would you change your processes if you were not allowed to triage patients back to a waiting room*?"

Solution #6: Divert patients from the ED stretcher bottleneck

- *Advanced triage* is good option when urgent or emergent patients arrive and no care spaces are available. A physician can respond to Triage, rapidly assess the patient, determine likely diagnosis and stability, and in many cases divert patients away from the nurse-staffed stretcher bottleneck
- Intake and RAZs are excellent diversion strategies for emergent and urgent patients Most CTAS 2 and 3 patients are appropriate for intake or RAZs, assuming they are capable of sitting and have no apparent life-limb threat. CDUs and MAUs serve similar functions for inpatients.
- *Diversion from the bottleneck* is the rationale for Fast Track areas

Solution #7: Address flow velocity mismatches

- ED inflow times are measured in minutes; ED outflow is measured in hours (e.g. 8 minutes to get in; 4-8 hours to get out).
- Rapid inflow associated with slow inflow is a recipe for inevitable severe crowding—even if hospital capacity is adequate.
- Inpatient units cannot match ED inflow rates, but the same effect may be achieved by rapidly flowing admitted patients from the ED into intake (buffer capacity) areas on inpatient units or to MAUs that allow rapid intake and subsequent controlled outflow to inpatient units.
- These options move part of the inpatient queue more quickly to an area of inpatient program control. Programs that generate queues need queue management plans (i.e. waiting rooms).

Updated Data Analysis for Fall/Winter 2022/23 Planning

Presentation to

Emergency Department and Hospital Capacity Task Group

Prepared: 29 September 2022, 2022

Health System Intelligence Unit

Data Analytics, Reporting and Evaluation - PHSA

Fall/Winter Hospital – Inpatient and Emergency Department Capacity Analysis

- The purpose of this presentation is to provide a current state snapshot of BC's inpatient units and emergency departments as well as to stimulate discussion to explore opportunities to optimize capacity across the system

- This analysis has been organized as follows:
  - Provide highlights on the analysis on hospitalization trends and projections for Fall/Winter 22/23
  - Highlight regional differences in hospitalization trends and projections
  - Summarize the current state of Emergency Departments and identify potential upstream and downstream opportunities to improve ED flow

Highlights of hospitalization trends and projections for Fall/Winter 22/23

Key messages:

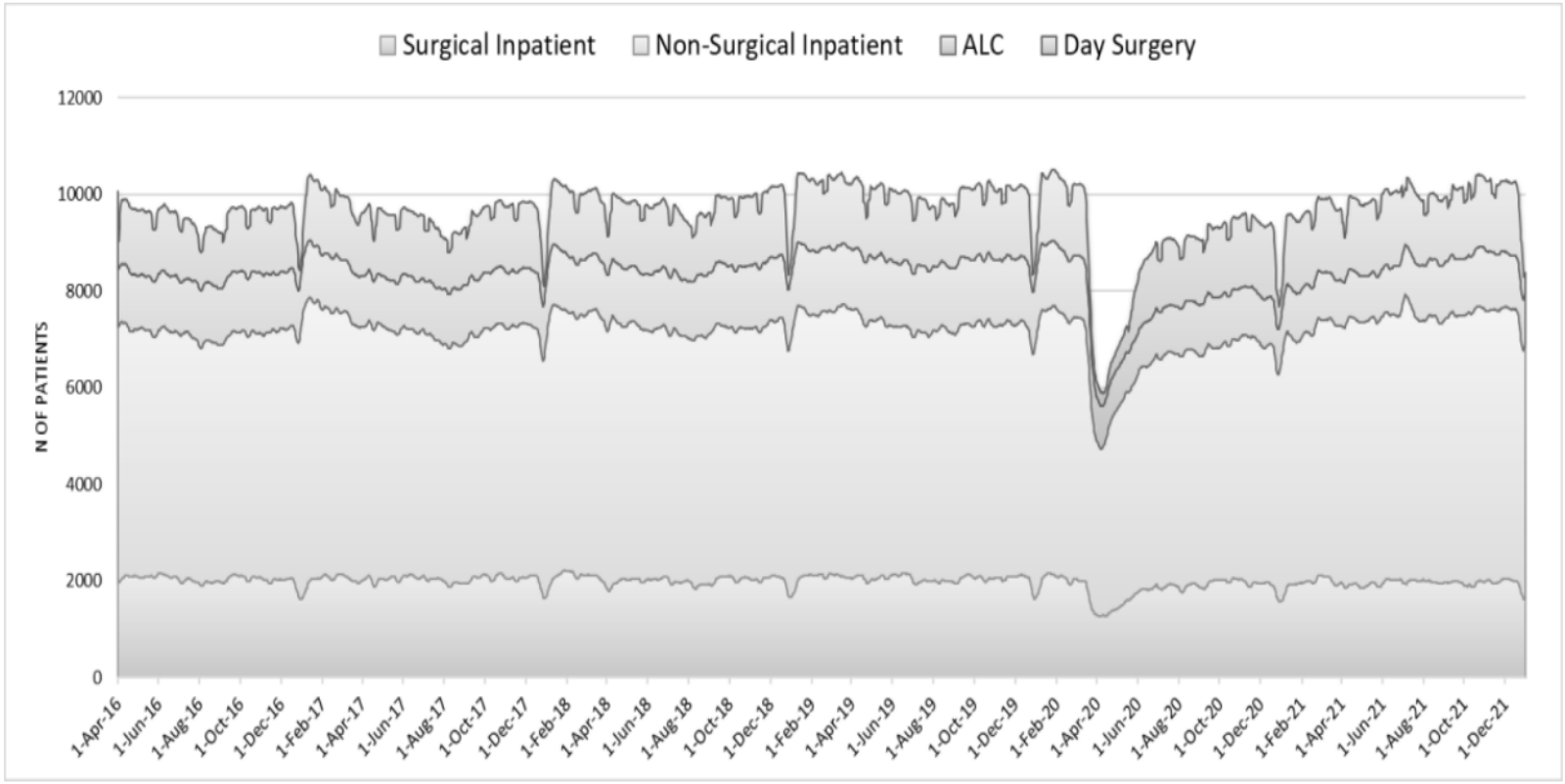
- Overall BC hospital census is returning to pre-pandemic levels
- Hospital volumes are expected to increase by a minimum of 3% over 2021/22 volumes with higher growth expected in ALC and Mental Health programs

Approach to Analyzing Hospitalization Trends

- Review of daily census over last 6 years (2016/17-2021/22) to investigate:
  - Seasonal variations
  - Impact of COVID-19 pandemic
- Focus on acute inpatient care (critical and non-critical care) – segmented into:
  1. ALC
  2. Mental Disorder (MRDx*)
  3. Respiratory Diseases (MRDx*)
     - COVID-19
     - Influenza
     - Acute Respiratory Infections
     - Other Respiratory Disease
  4. Ambulatory Care Sensitive Conditions (ACSC)
  5. Surgical Inpatients
  6. All Other Medical Inpatients
- "What-if' scenarios developed to estimate the potential impact on inpatient volumes into the fall/winter

MRDx* = Only those hospitalizations with the most responsible diagnosis for each condition are included in that specific grouping. For example, when COVID-19 is a contributing diagnosis to a hospitalization the hospitalization is not considered COVID-19.

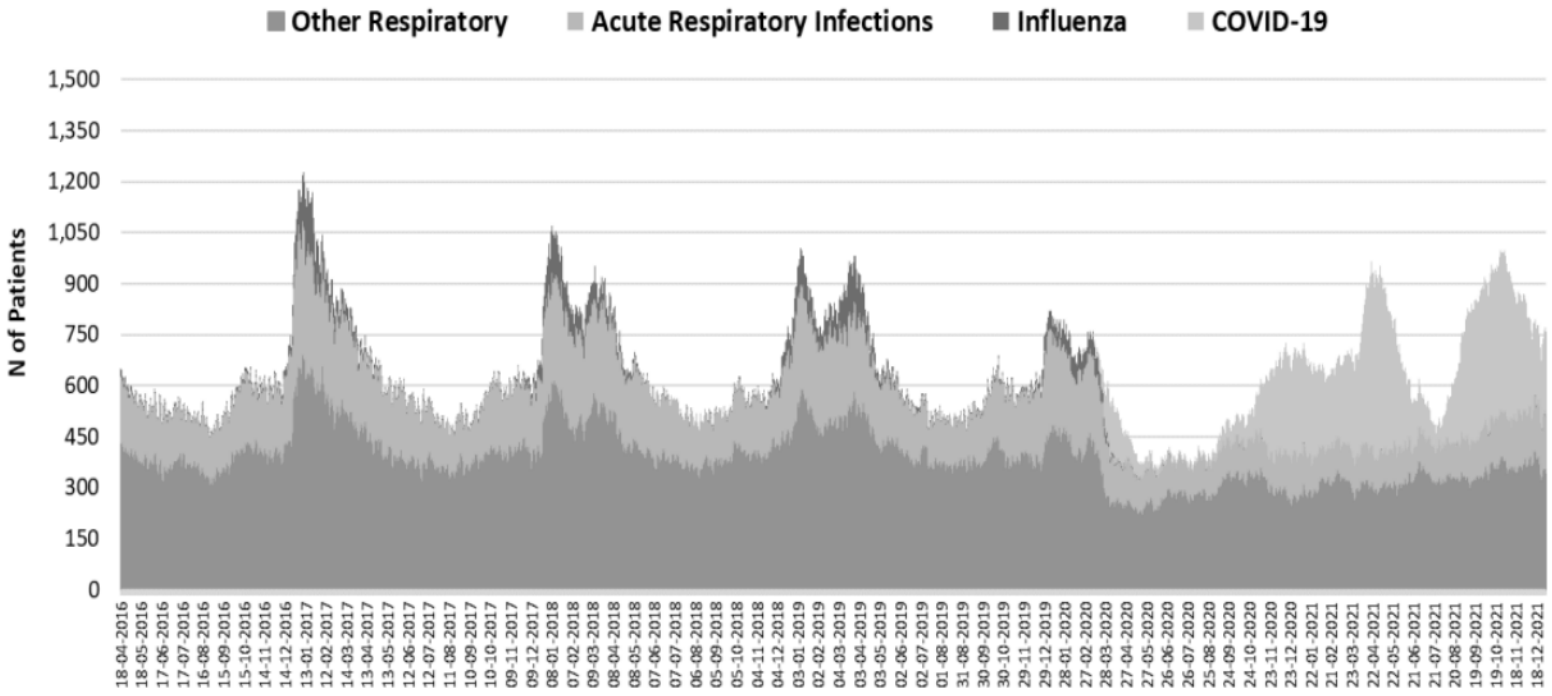
Overall BC Hospital Census* is Trending Toward Pre-pandemic Levels



- The graph shows daily volumes in BC hospitals including acute inpatient census and day surgery
- Over the entire study period, there are ~8,500 acute inpatient hospitalizations and ~2,000 daycare surgeries in BC per day
- BC hospital volumes have been impacted throughout the COVID-19 pandemic; **hospitalization volumes are trending toward pre-pandemic historical level**

* Daily volume presented as 7-day moving average

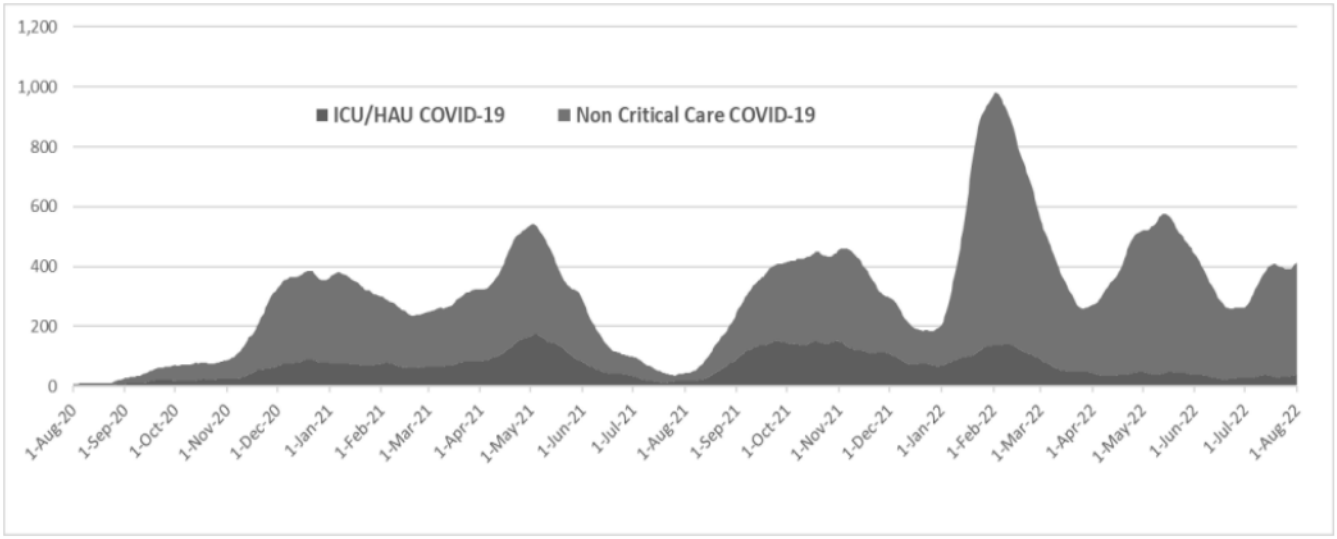
Example of Segmented Analysis: Historical Trends in Respiratory* Inpatient Census

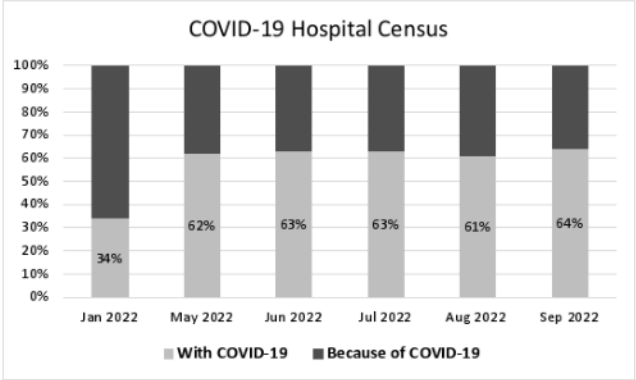


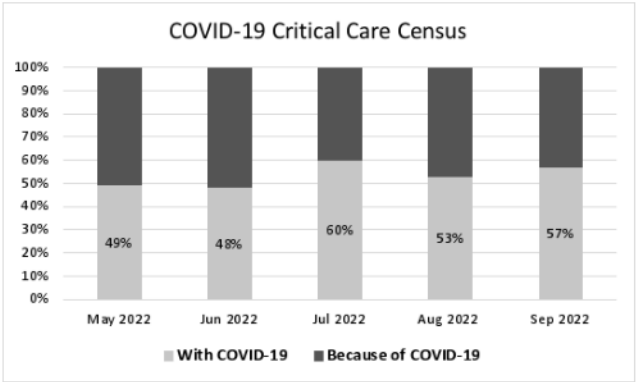
* The most responsible diagnosis (MRDx) is used to identify respiratory disease and COVID cases.

- The number of cases of influenza, acute respiratory infections, and other respiratory illnesses in BC varied substantially from season to season
- **Respiratory illnesses typically begin to increase in Nov and remain at elevated levels between Dec and Apr. The 2017–2020, pre-pandemic, seasons are characterized by two consecutive waves**
- Overall respiratory cases decreased substantially during the 2020-2021 COVID-19 pandemic period
- During the pandemic – with public health measures - the overall census of COVID-19 plus other respiratory infections did not reach pre-pandemic respiratory volumes
    - **This is as a result of lower census of other respiratory conditions during the pandemic**

Changing Tides of COVID-19 Surges Over Time



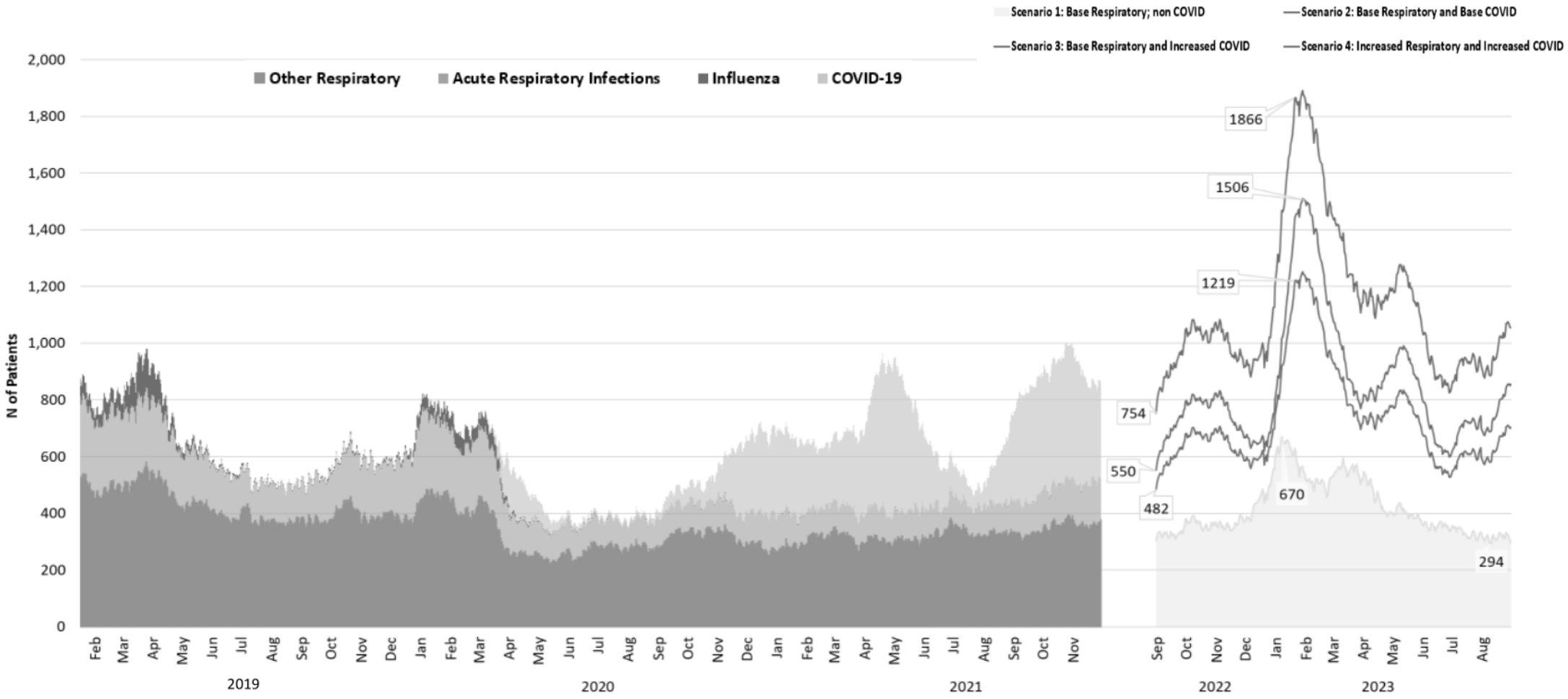




- To date, the COVID-19 surges do not follow respiratory surge seasonal patterns (i.e., in Dec and Apr). Rather, there are more frequent surges during the year with COVID-19 with less pronounced decreases (e.g., "lows") in cases between waves.

- COVID-19 hospital census gradually changed from **60%** of COVID-19 patients being in hospital ***because-of-COVID*** (in Jan 2022) to **> 60%** of positive patients in hospital ***with-COVID*** (in Sep 2022)

Example of ‘What if’ Scenario Testing: Estimating Respiratory/COVID-19 Census for 2022/23



Summary of 'What if' Scenarios by Segmented Condition

	Actual Average Census							Estimated Average Census		
Condition	**Fall/Winter 2016/17[1]**	**Fall/Winter 2017/18**	**Fall/Winter 2018/19**	**Fall/Winter 2019/20[2]**	**Fall/Winter 2020/21**	**Fall 2021[3]**	**Fall/Winter 2021/22[4]**	**Base Fall/Winter 2022/23**	**Moderate Fall/Winter 2022/23**	**Increased Fall/Winter 2022/23**
ALC	1,136	1,168	1,301	1,350	982	1,177	1,160	1,269	1,335	1,431
Mental Health Disorder	984	977	988	1,013	1,024	1,067	1,052	1,143	1,181	1,321
COVID-19 MRDx	--	--	--	--	246	402	455	373	449	546
Influenza	29	31	40	21	1	1	1	28	37	47
Acute Respiratory Infection	218	210	195	191	99	124	123	136	180	227
Other Respiratory Disease	425	413	407	367	284	312	307	396	375	475
ACSC (excl. Respiratory Above)	304	304	313	305	298	303	299	299	303	303
Inpatient Surgery	1,985	2,003	2,010	2,002	1,898	1,926	1,899	1,947	2,009	2,134
All Other Medical Conditions	3,365	3,390	3,440	3,456	3,257	3,459	3,409	3,409	3,451	3,459
Total Hospital Census	**8,445**	**8,496**	**8,695**	**8,705**	**8,088**	**8,771**	**8,704**	**9,001**	**9,319**	**9,942**

[1] Fall/Winter season includes period from beginning-of-September to end-of-May

[2] Fall/Winter 2019/20 ends at the end of Feb 2020, before COVID-19 epidemic starts

[3] Fall 2021, from Sep 2021 to end-of-Nov 2021, is based on DAD data and includes Delta VOC

[4] Fall/Winter 2021/22, from Sep 2021 to end-of-May 2022, is based on HA-reported census and PCMS data and includes Omicron VOC data

- The Base scenario for the Fall/Winter 2022/23 is at an average daily census of 9,001 patients or a 3% increase over 2021/22 census which represents typical annual census growth over two years
  - An increased census should specifically be planned for ALC and Mental Health programs
- The Moderate scenario represents a roughly doubling of that increase (or 7% increase over 2021/22)
- The Increased scenario, while unlikely, represents a 14% increase over 2021/22
- These scenarios formed the basis for the hospital operational capacity planning exercise (Stages 2-5), performed by each HA

Highlights of HA level hospitalization trends

Key messages:

- NH reports the highest proportion of ALC and Other Mental Disorder census compared to the provincial average
- IH reports a higher proportion of ALC census compared to the provincial average
- VCH reports a higher proportion of Other Mental Disorder census and a lower proportion of ALC census compared to the provincial average

Pre-pandemic vs. 2021/22 Fall Winter Census Distribution

Condition	IHA				FHA				VCHA			
	Fall/Winter 2019/20	Fall/Winter 2021/22	*Fall/Winter 2019/20*	*Fall/Winter 2021/22*	Fall/Winter 2019/20	Fall/Winter 2021/22	*Fall/Winter 2019/20*	*Fall/Winter 2021/22*	Fall/Winter 2019/20	Fall/Winter 2021/22	*Fall/Winter 2019/20*	*Fall/Winter 2021/22*
ALC	278	260	*19%*	*17%*	455	380	*16%*	*13%*	158	166	*8%*	*8%*
Mental Health - Dementia	9	13	*1%*	*1%*	25	30	*1%*	*1%*	20	38	*1%*	*2%*
Mental Health - Other	177	173	*15%*	*14%*	295	318	*12%*	*13%*	274	294	*15%*	*16%*
COVID-19 MRDx	--	99	*0%*	*8%*	--	110	*0%*	*4%*	--	69	*0%*	*4%*
All Respiratory	101	80	*8%*	*6%*	201	149	*8%*	*6%*	128	103	*7%*	*6%*
ACSC (Excl. Respiratory Above)	49	48	*4%*	*4%*	109	112	*5%*	*4%*	64	67	*4%*	*4%*
Inpatient Surgery	315	309	*26%*	*25%*	503	524	*21%*	*21%*	575	539	*32%*	*29%*
All Other Medical Conditions	554	532	*46%*	*42%*	1,243	1,270	*52%*	*51%*	722	741	*40%*	*40%*
Total Non-ALC Census	1,205	1,255	*81%*	*83%*	2,376	2,514	*84%*	*87%*	1,784	1,851	*92%*	*92%*
Total Census	1,483	1,515			2,832	2,894			1,942	2,016		

Condition	VIHA				NHA				BC			
	Fall/Winter 2019/20	Fall/Winter 2021/22	*Fall/Winter 2019/20*	*Fall/Winter 2021/22*	Fall/Winter 2019/20	Fall/Winter 2021/22	*Fall/Winter 2019/20*	*Fall/Winter 2021/22*	Fall/Winter 2019/20	Fall/Winter 2021/22	*Fall/Winter 2019/20*	*Fall/Winter 2021/22*
ALC	291	258	*16%*	*14%*	167	126	*28%*	*23%*	1,350	1,190	*16%*	*14%*
Mental Disorder - Dementia	33	27	*2%*	*2%*	5	2	*1%*	*0%*	92	109	*1%*	*1%*
Mental Disorder - Other	191	200	*12%*	*13%*	81	70	*19%*	*17%*	1,018	1,056	*14%*	*14%*
COVID-19 MRDx	--	48	*0%*	*3%*	--	62	*0%*	*15%*	--	388	*0%*	*5%*
All Respiratory	112	83	*7%*	*5%*	36	22	*8%*	*5%*	579	436	*8%*	*6%*
ACSC (Excl. Respiratory Above)	63	56	*4%*	*4%*	20	20	*5%*	*5%*	305	304	*4%*	*4%*
Inpatient Surgery	428	391	*27%*	*25%*	78	55	*18%*	*13%*	1,898	1,818	*26%*	*24%*
All Other Medical Conditions	734	740	*47%*	*48%*	208	185	*49%*	*0%*	3,462	3,468	*47%*	*46%*
Total Non-ALC Census	1,561	1,544	*84%*	*86%*	429	416	*72%*	*77%*	7,355	7,579	*84%*	*86%*
Total Census	1,852	1,803			596	542			8,705	8,770		

- Of note, in comparison to the other Health Authorities:
  - NH reported the highest percentage of ALC Census and Other MH Disorders
  - VCH reported the lowest percentage of ALC Census but, was among the highest percentage of Other MH Disorders

Summary of 'What if' Scenarios by HA

HA	Hospital Census	Actual Average Census		Estimated Average Census				% Change from 2021/22		
		Fall/Winter 2019/20[2]	Fall/Winter 2021/22[3]	Base Fall/Winter 2022/23	Moderate Fall/Winter 2022/23	Increased Fall/Winter 2022/23	Fall/Winter 2021/22 vs. 2019/20	Base Fall/Winter 2022/23	Moderate Fall/Winter 2022/23	Increased Fall/Winter 2022/23
IHA	Total Non-COVID Census	1,483	1,435	1,509	1,555	1,654	-3.2%	5.2%	8.4%	15.3%
	Total Census	1,483	1,524	1,582	1,643	1,761	2.8%	3.8%	7.8%	15.6%
FHA[1]	Total Non-COVID Census	2,616	2,440	2,548	2,616	2,765	-6.7%	4.4%	7.2%	13.3%
	Total Census	2,616	2,617	2,693	2,791	2,978	0.0%	2.9%	6.6%	13.8%
VCHA[1]	Total Non-COVID Census	2,022	2,048	2,139	2,199	2,339	1.3%	4.4%	7.4%	14.2%
	Total Census	2,022	2,145	2,219	2,295	2,456	6.1%	3.4%	7.0%	14.5%
VIHA	Total Non-COVID Census	1,852	1,782	1,861	1,913	2,024	-3.8%	4.4%	7.4%	13.6%
	Total Census	1,852	1,834	1,904	1,964	2,086	-1.0%	3.8%	7.1%	13.7%
NHA	Total Non-COVID Census	596	546	578	595	631	-8.4%	5.9%	9.0%	15.6%
	Total Census	596	586	611	635	679	-1.7%	4.3%	8.4%	15.9%
BC	**Total Non-COVID Census**	**8,569**	**8,249**	**8,634**	**8,876**	**9,407**	**-3.7%**	**4.7%**	**7.6%**	**14.0%**
	Total Hospital Census	**8,569**	**8,704**	**9,001**	**9,319**	**9,942**	**1.6%**	**3.4%**	**7.1%**	**14.2%**

[1] Fall/Winter 2019/20 census based on DAD date adjusted to match census data reported by HA for FHA and VCHA

[2] Fall/Winter 2019/20 ends at the end of Feb 2020, before COVID-19 epidemic starts

[3] Fall/Winter 2021/22, from Sep 2021 to end-of-May 2022, is based on HA-reported census and PCMS data and includes Omicron VOC data

- NH reports the highest expected increase in growth in 2022/23 given the highest prevalence of ALC and Other Mental Disorders in NH hospitals
- Similarly, the influence of a higher ALC census in IH hospitals contributes to the higher than average growth expected in IH census

Highlights of Emergency Department trends

Key messages:

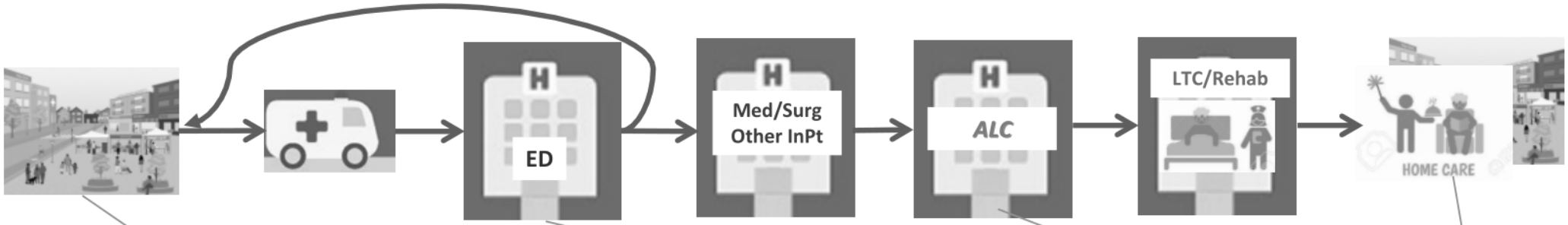
- ED volumes are increasing and proportional to population growth
- Overall wait times are increasing across all acuity levels for both discharged from ED and admitted patients
- The time waiting for an inpatient bed is increasing and represents the longest portion of ED LOS for admitted patients

Approach to Analyzing ED Trends

- Review of daily visits over last 5 years (2017/18-2021/22) to investigate:
  - Seasonal variations
  - Impact of COVID-19 pandemic
- Summary of analysis includes:
  - General descriptives
    - ED volumes
    - LOS
    - Admission rates
  - Areas for exploration
    - Upstream and downstream patient flow that impacts ED operations

	IHA	FHA	VCHA	VIHA	NHA	PHSA	BC
Number of acute care facilities	22	12	11	14	18	3	80
Number of NACRS facilities	2	12	6	8	1	1	30
NACRS % of total ED visits	33.1%	100.0%	84.8%	91.2%	19.4%	100.0%	73.8%
Total ED visits	596,808	692,475	436,256	451,417	244,383	42,667	2,464,006
Total inpatient case count	84,227	146,566	86,888	85,798	28,325	22,279	453,993
Admission rate	15.8%	11.7%	13.2%	14.6%	14.2%	7.4%	12.9%
N of ED visits/100 population	72.7	35.4	35.0	52.1	80.8	--	47.4
N of Inpt cases/100 population	10.3	7.5	7.0	9.9	9.4	--	8.7

Examining Opportunities to Improve Patient Flow



Potentially avoidable ED visits

Overall ED metrics
- ED volumes
- LWBS
- Time to physician initial assessment
- ED LOS for non-admitted patients
- ED admission rate

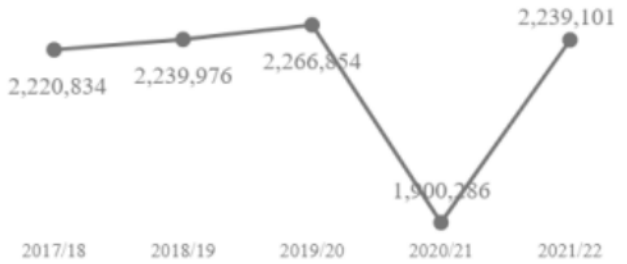
Metrics specific for admitted pts:
- ED LOS for admitted patients
- Time waiting for inpatient bed

ALC cases, days and LOS by:
- Discharge type
- ALC Reason
- Case CMG (Diagnostic Grouping)
- Age: Adult (1-64) vs. Seniors (65+)

- New LTC Residents who Potentially Could have been Cared for at Home

ED Volumes Returning to Pre-pandemic Levels

Unscheduled ED visits by fiscal year



Admission rate by fiscal year

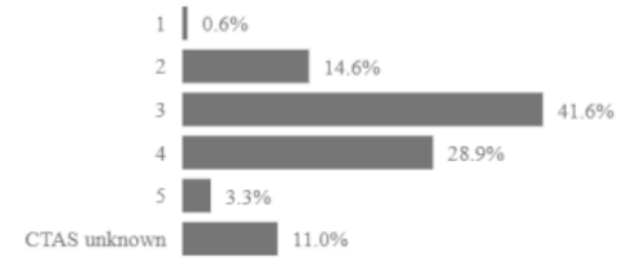
Left without being seen rate by fiscal year

Unscheduled ED visits by fiscal year

Admission rate by quarter

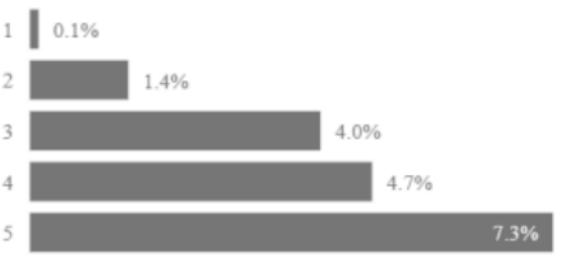
Left without being seen rate by quarter

Unscheduled ED visits by triage level



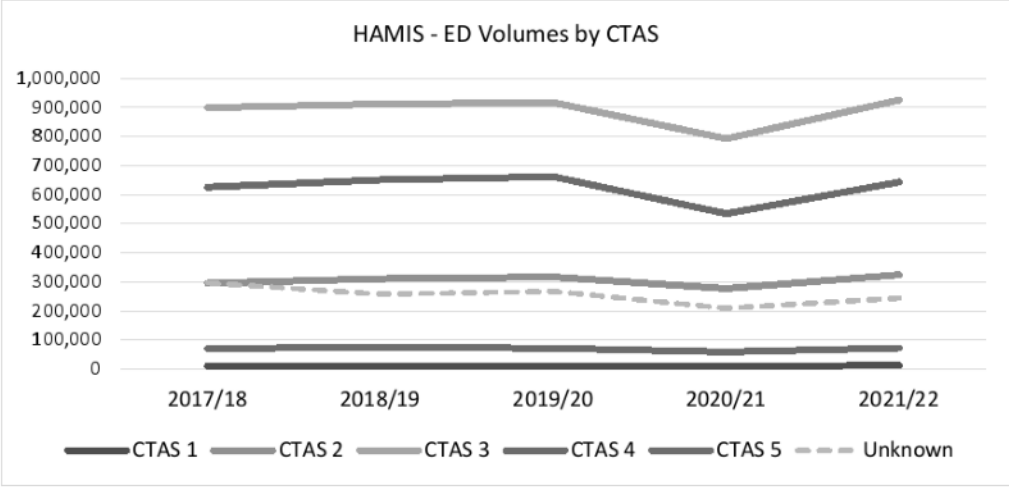
Admission rate by triage level

Left without being seen rate by triage level



Growth of High-Acuity (CTAS 1-2) Higher than Growth of Low-Acuity (CTAS 4-5) ED Visits

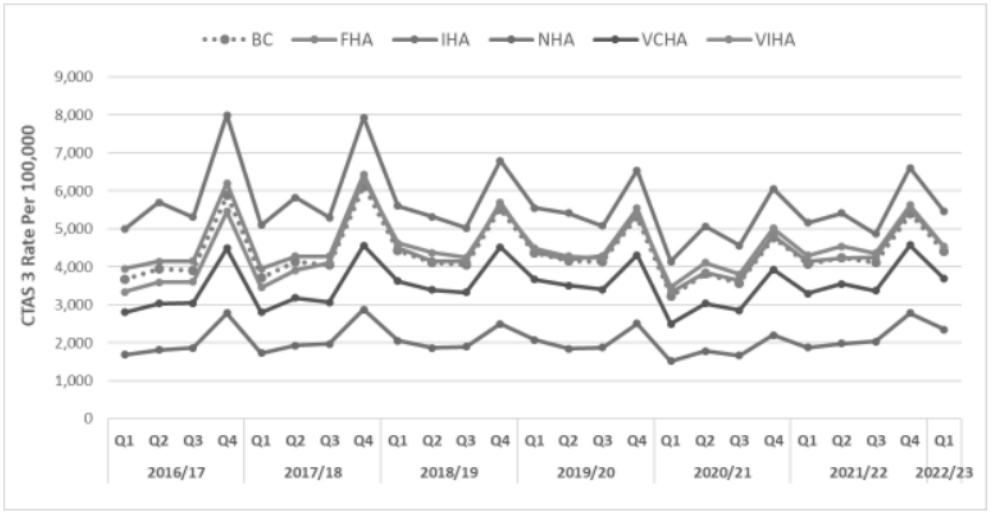
CTAS	HAMIS ED Volumes					Change from 2017/18 to				2021/22 vs. 2019/20
	2017/18	2018/19	2019/20	2020/21	2021/22	2018/19	2019/20	2020/21	2021/22	
CTAS 1	11,356	11,580	11,749	11,106	12,980	2.0%	3.5%	-2.2%	14.3%	10.5%
CTAS 2	295,900	311,539	317,779	277,867	325,135	5.3%	7.4%	-6.1%	9.9%	2.3%
CTAS 3	899,849	911,928	917,576	793,375	925,817	1.3%	2.0%	-11.8%	2.9%	0.9%
CTAS 4	626,518	651,575	662,063	535,683	643,720	4.0%	5.7%	-14.5%	2.7%	-2.8%
CTAS 5	71,438	76,239	72,549	59,696	72,804	6.7%	1.6%	-16.4%	1.9%	0.4%
Unknown	296,646	257,950	267,713	209,772	244,399	-13.0%	-9.8%	-29.3%	-17.6%	-8.7%
Total Volume	2,201,707	2,220,811	2,249,429	1,887,499	2,224,855	0.9%	2.2%	-14.3%	1.1%	-1.1%



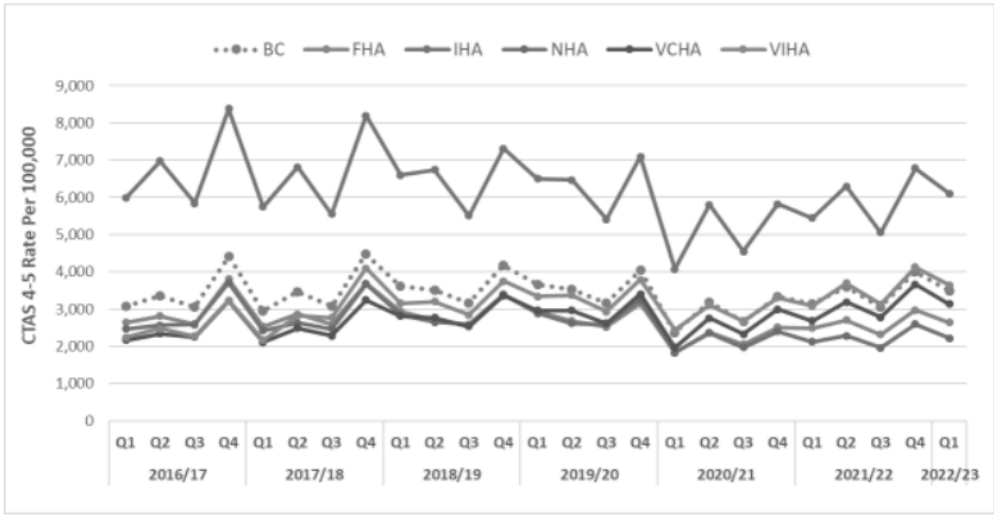
- Overall ED visit volumes almost reached pre-pandemic levels
- Increases in higher acuity levels are larger than in lower acuity levels
- CTAS 3 visits continue to have the highest volume and represent 42% of all visits
- Decrease in number of visits with unknown CTAS

Growth of Low-Acuity (CTAS 3-5) ED Visits For BC is Proportional to Population Growth

CTAS 3 Visits per 100,000 Population



CTAS 4-5 Visits per 100,000 Population

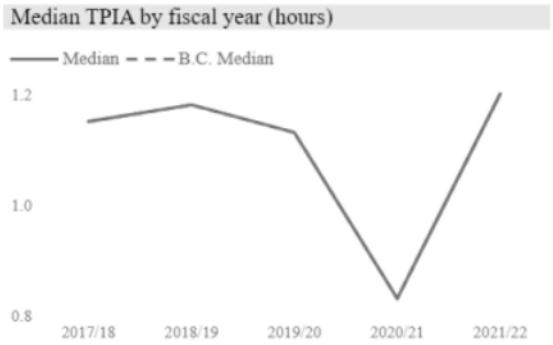


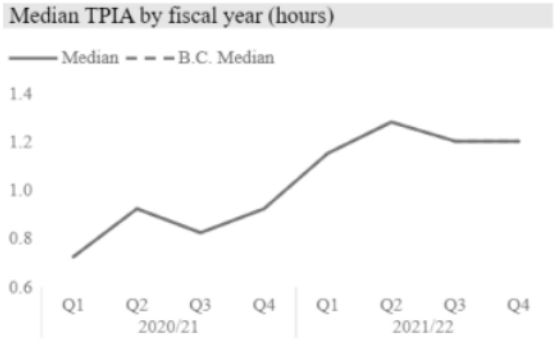
- The charts indicate the population rate per 100,000 of low-acuity ED use (CTAS 3-5) in BC and by HAs
- Rate of low-acuity ED use (CTAS 3;4-5) varies substantially by health authority (and may be somewhat influenced by the completeness of the data provided)
- Use of the ED is highly seasonally dependent, specifically CTAS 4/5 and may provide an opportunity for identifying seasonal clinics to manage the peaks

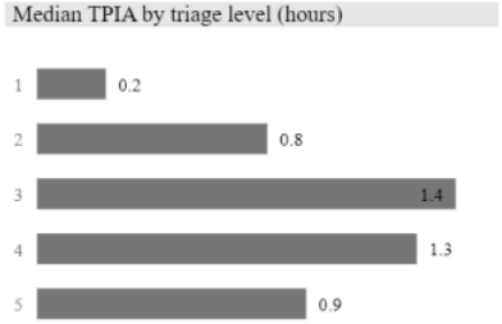
*IHA and NHA visit rates per population are underestimated

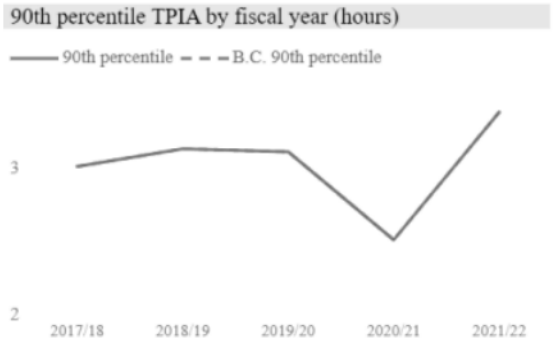
Time to Physician Initial Assessment at Pre-Pandemic Levels

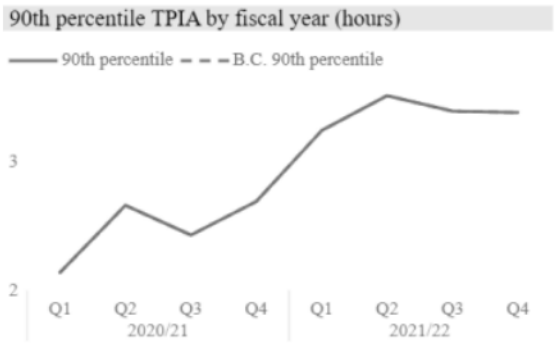
Benchmark - Median	Median	% Meeting benchmark	Benchmark - 90th percentile:	90th percentile	% Meeting benchmark
1.0 (hours)	1.2 (hours)	43% Based on benchmark for median	3.0 (hours)	3.4 (hours)	87% Based on benchmark for 90th percentile

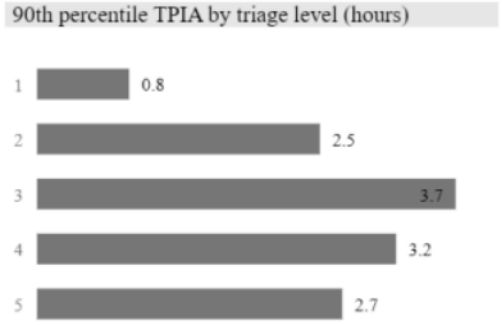






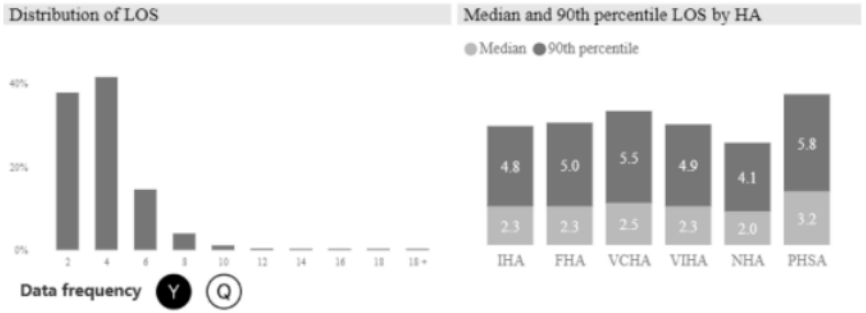


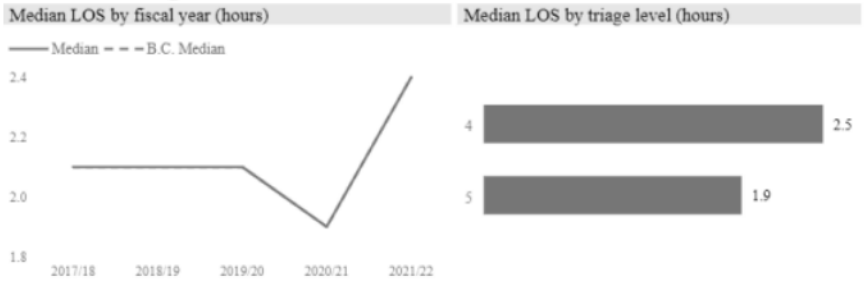


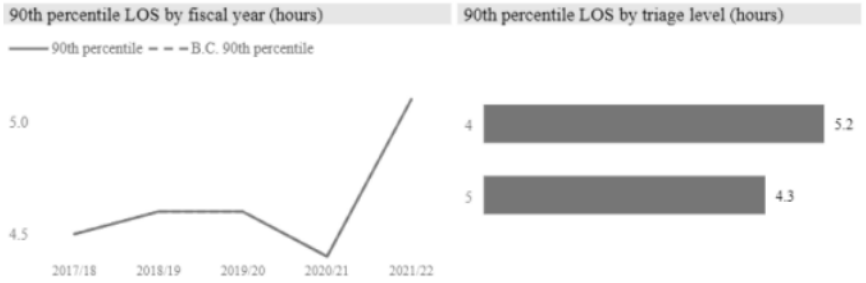


- While the time to physician initial assessment increased in 2021/22, the median assessment time remains relatively constant over the quarters and similar to pre-pandemic levels

Longer ED LOS for Discharged Patients (Low Acuity)





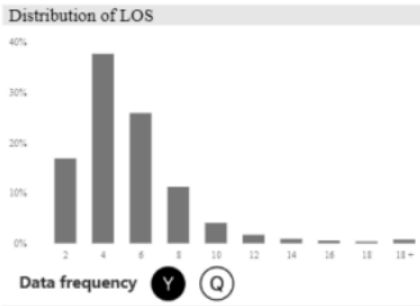


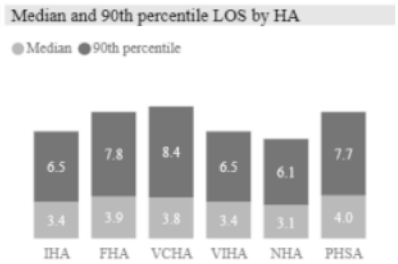
Benchmark - Median	Median	% Meeting benchmark
2.0 (hours)	2.4 (hours)	42% Based on benchmark for median

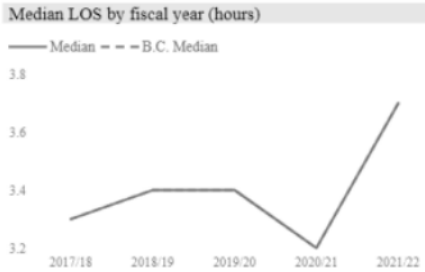
Benchmark - 90th percentile:	90th percentile	% Meeting benchmark
4.0 (hours)	5.1 (hours)	81% Based on benchmark for 90th percentile

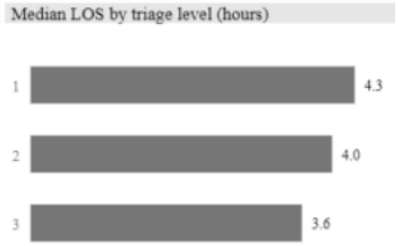
- ED median length of stay for low acuity patients (CTAS levels 4-5) increased in 2021/22
- Overall, ED length of stay for low acuity visits is lower than high acuity visits
- Note that the LOS data summarized in this slide is largely driven by the LOS of CTAS level 4 patients who represent 90% of the patients in this group

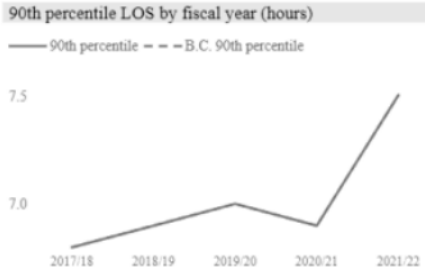
Longer ED LOS for Discharged Patients (High Acuity)

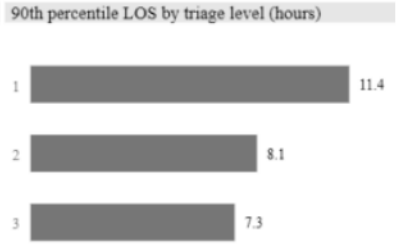










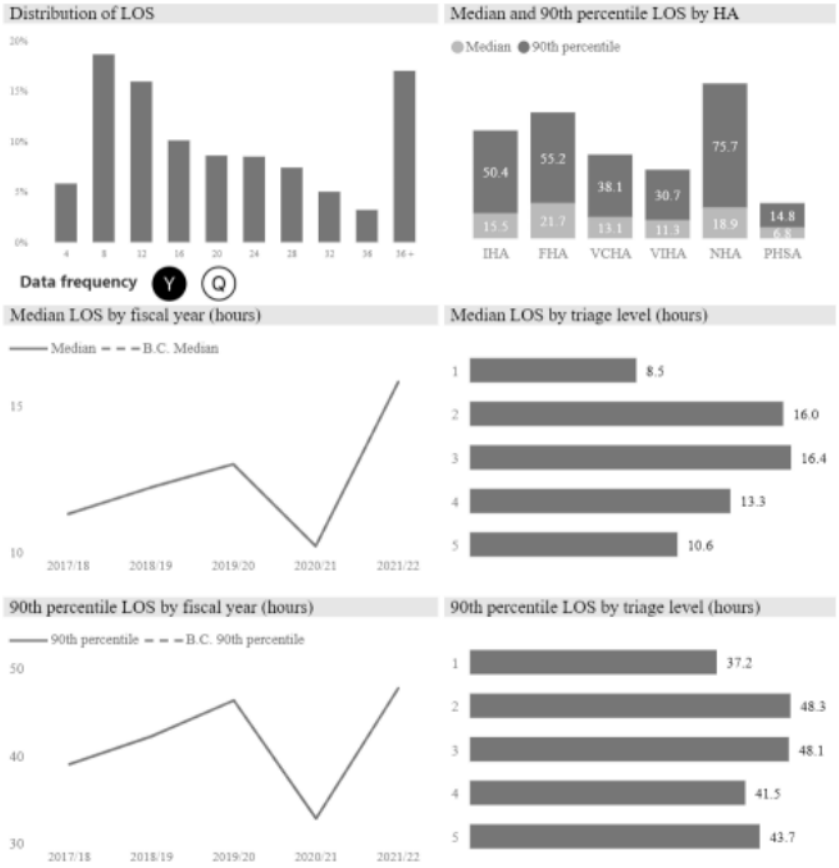


Benchmark - Median	Median	% Meeting benchmark
4.0 (hours)	3.7 (hours)	56% Based on benchmark for median

Benchmark - 90th percentile:	90th percentile	% Meeting benchmark
8.0 (hours)	7.5 (hours)	92% Based on benchmark for 90th percentile

- ED median length of stay for high acuity patients (CTAS levels 1-3) increased in 2021/22
- Note that the LOS data summarized in this slide is largely driven by the LOS of CTAS level 3 patients who represent 78% of the patients in this group

ED Length of Stay (LOS) for Admitted Patients Longer than Before Epidemic

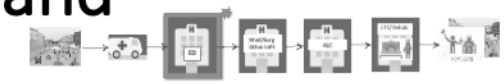


Benchmark - Median	Median	% Meeting benchmark
8.0 (hours)	15.8 (hours)	25% Based on benchmark for median

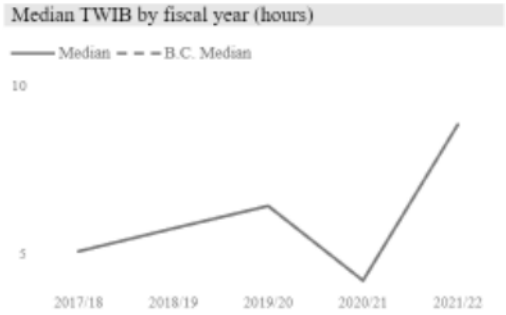
Benchmark - 90th percentile:	90th percentile	% Meeting benchmark
12.0 (hours)	47.7 (hours)	41% Based on benchmark for 90th percentile

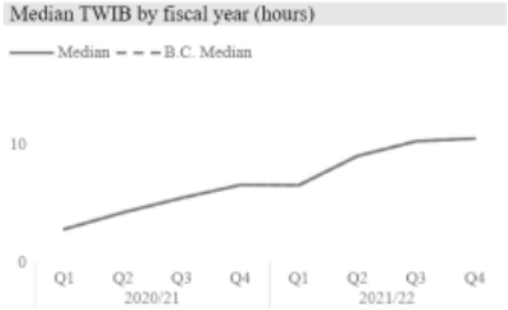
- LOS for patients admitted through ED is substantially longer in 2021/22 than pre-pandemic
- Even the most acute (CTAS 1) patients stayed in ED longer than the median benchmark; CTAS 2 and 3 stayed in ED two times longer than the median benchmark and four times longer than 90th percentile benchmark

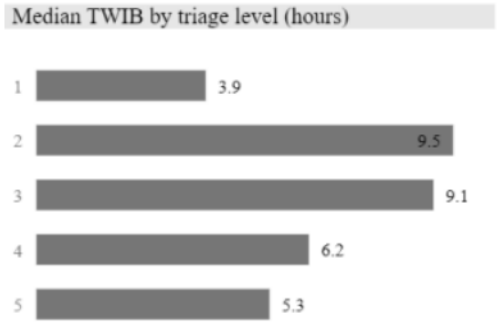
ED Time Waiting for an Inpatient Bed is Increasing and Represents the Majority of Time Waiting

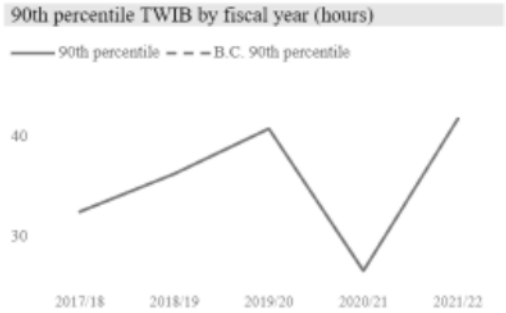


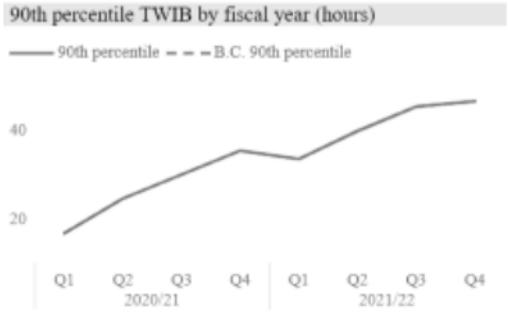
Benchmark - Median	Median	% Meeting benchmark	Benchmark - 90th percentile:	90th percentile	% Meeting benchmark
2.0 (hours)	8.8 (hours)	19% Based on benchmark for median	8.0 (hours)	41.6 (hours)	48% Based on benchmark for 90th percentile

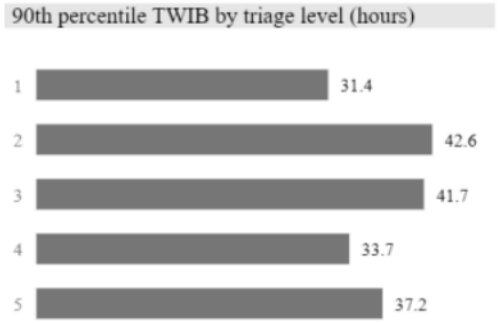






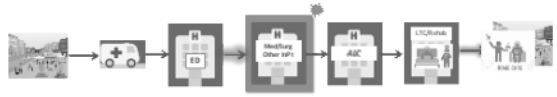


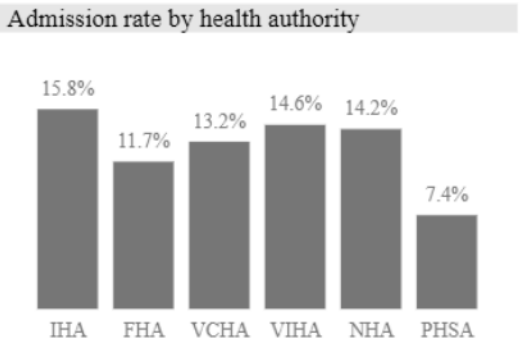


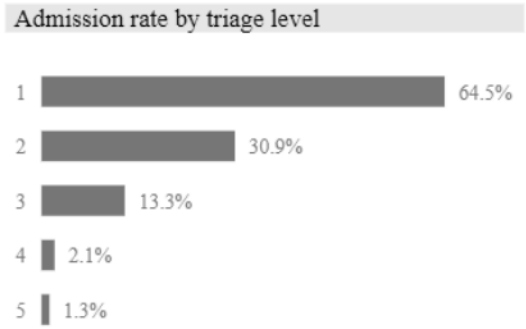


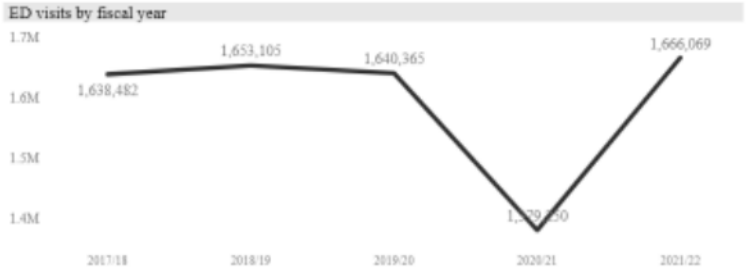
- Patients admitted through ED spend majority of their ED LOS waiting for an inpatient bed
- The 2021/22 ED LOS for admitted patients is longer than the pre-pandemic LOS

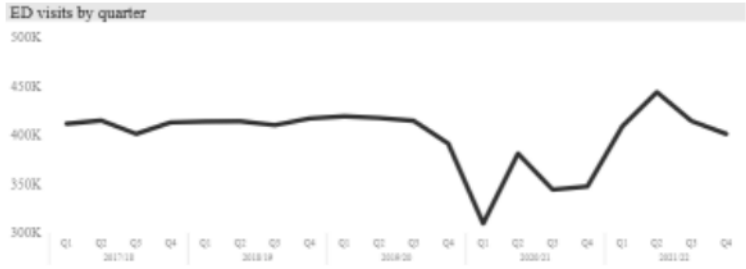
ED Admission Rates Returned to Pre-Pandemic Levels

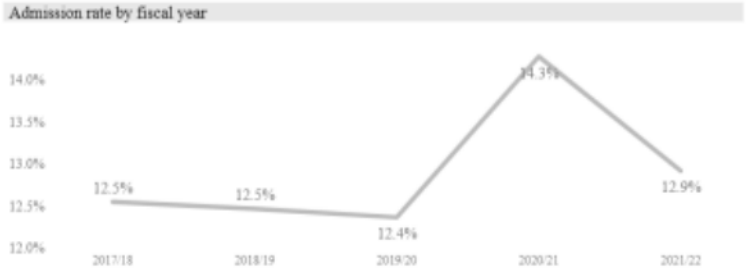












- While variation exists in the admission rates by HA, the ED admission rates in 2021/22 returned to pre-pandemic levels (12.5-12.9%)

Examining Opportunities to Improve Hospital Capacity

The following slides are meant to provide a starting point for discussion and exploration of opportunities

Page 0340 of 1067 to/à Page 0349 of 1067

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s.13

ED Additional Slides

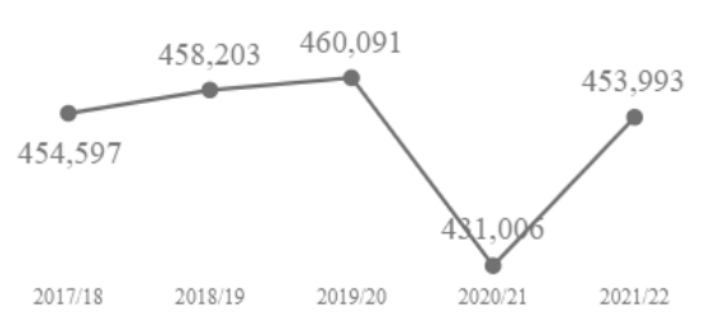
Approach and Data Sources

- **Preliminary analysis of ED visit trends to inform Fall/Winter 2022/23 Capacity Planning**
- Review of daily visits over last 5 years (2017/18-2021/22) to understand seasonal variations and impact of COVID-19 pandemic on BC volumes

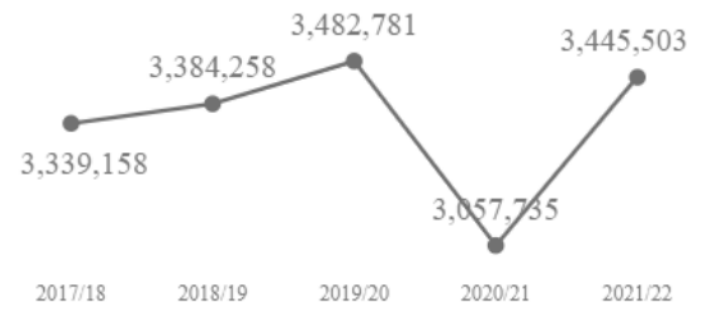
- Data Sources
  - NACRS
  - HAMIS
  - Health System Performance Portal

BC Hospitals: Overview by Year

Inpatient cases by fiscal year

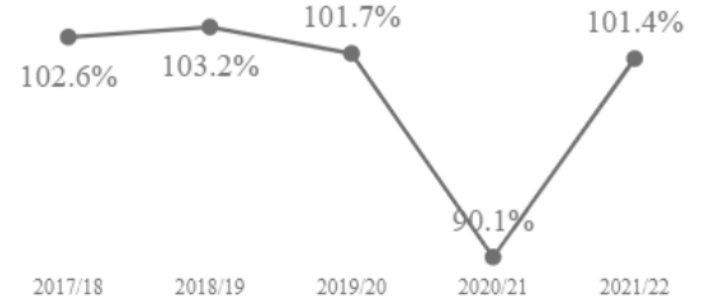


Inpatient days by fiscal year

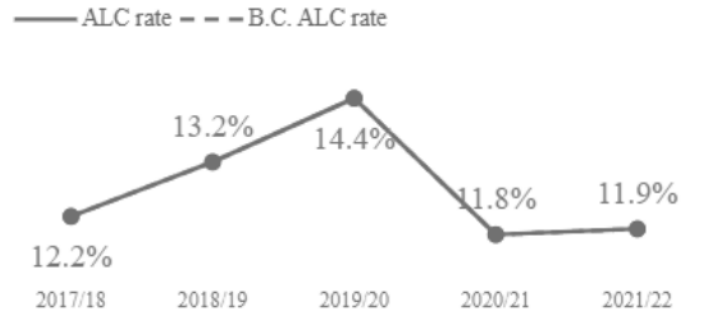


Average Length of Stay (ALOS) by fiscal year

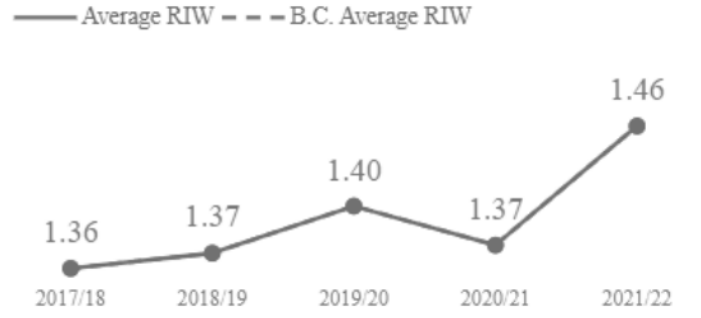
Hospital occupancy rate by fiscal year



ALC rate by fiscal year

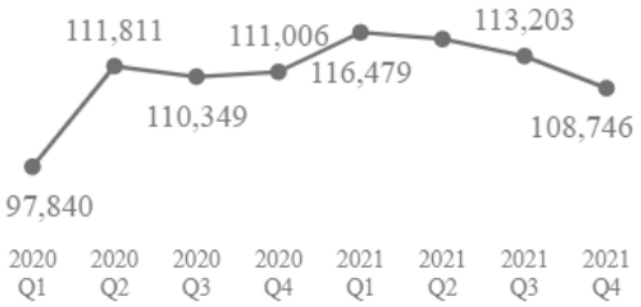


Average Resource Intensity Weights by fiscal year

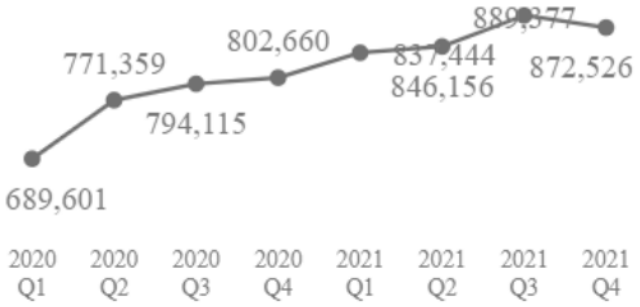


BC Hospitals: Overview by Quarter

Inpatient cases by quarter

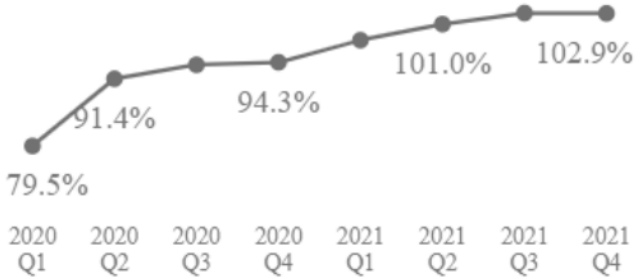


Inpatient days by quarter



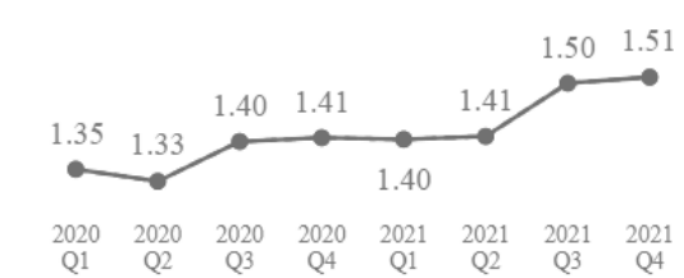
Average Length of Stay (ALOS) by quarter

Hospital occupancy rate by quarter



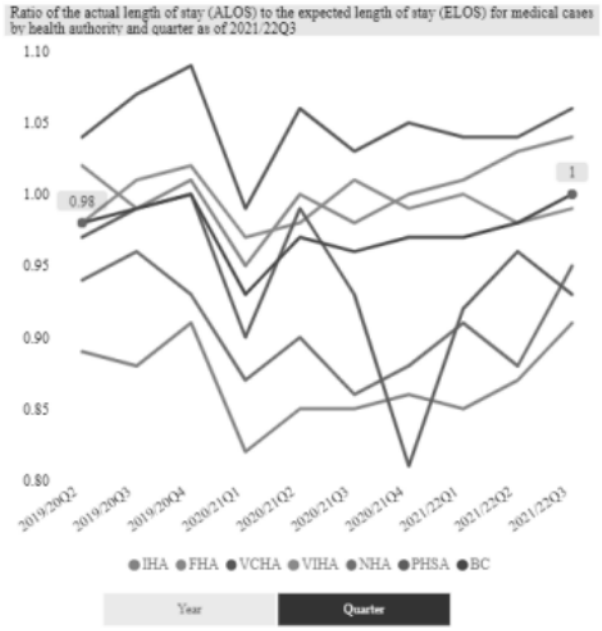
ALC rate by quarter

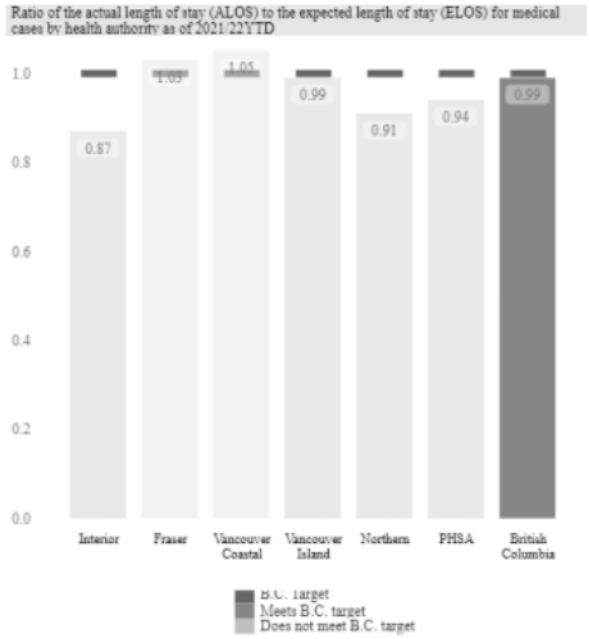
Average Resource Intensity Weights by quarter



Actual Length of Stay versus Expected Length of Stay (Medical)
ALOS vs. ELOS

0.99	1	839,690	852,004		
Ratio (as of 2021/22YTD)	Target	Actual length of stay	Expected length of stay	Trending	Desired direction



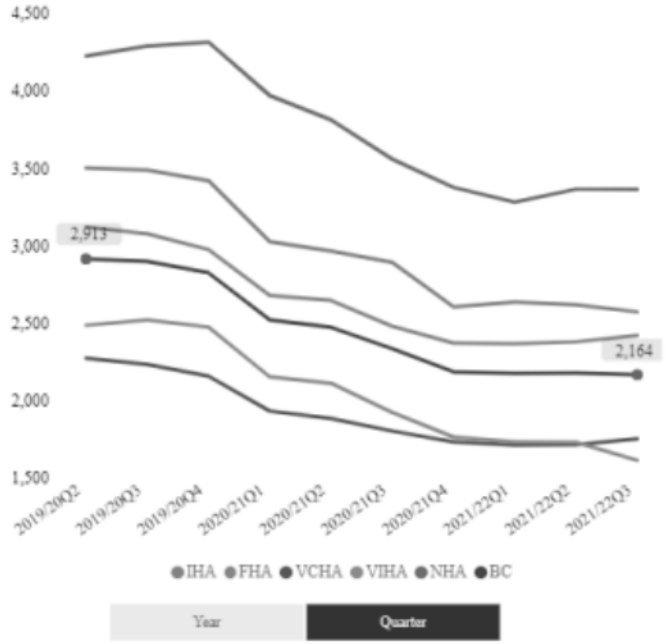


Data for VIHA for 2021/22 Q3 and 2021/22 YTD are incomplete. Consquently, data for B.C. for 2021/22 Q3 and 2021/22 YTD are incomplete.

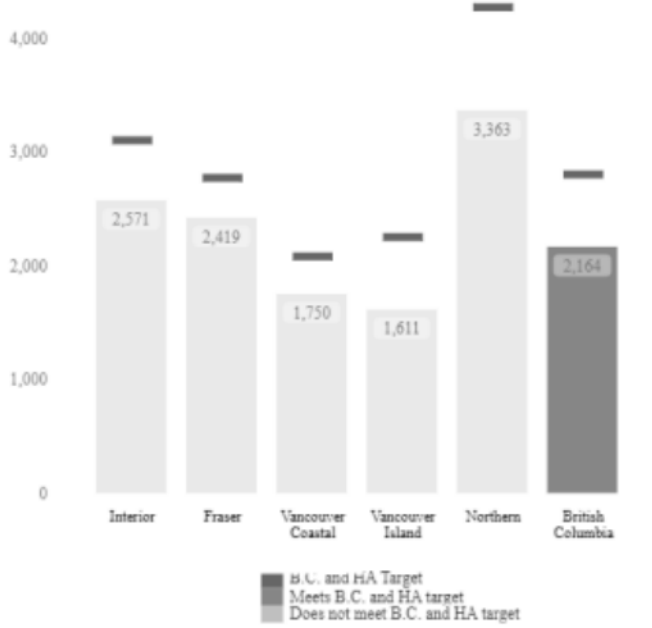
ACSC admissions decreased due to decreased respiratory admissions

2,164	2,800	6,936	428,304		
Age-standardized rate per 100,000 population age 75+ (moving four quarters as of 2021/22Q3)	Target	Hospitalizations	Population age 75+	Trending	Desired direction

The acute care hospitalization age-standardized rate per 100,000 population aged 75 and older conditions where appropriate ambulatory care prevents or reduces the need for hospital admiss... by health authority and quarter as of 2021/22Q3

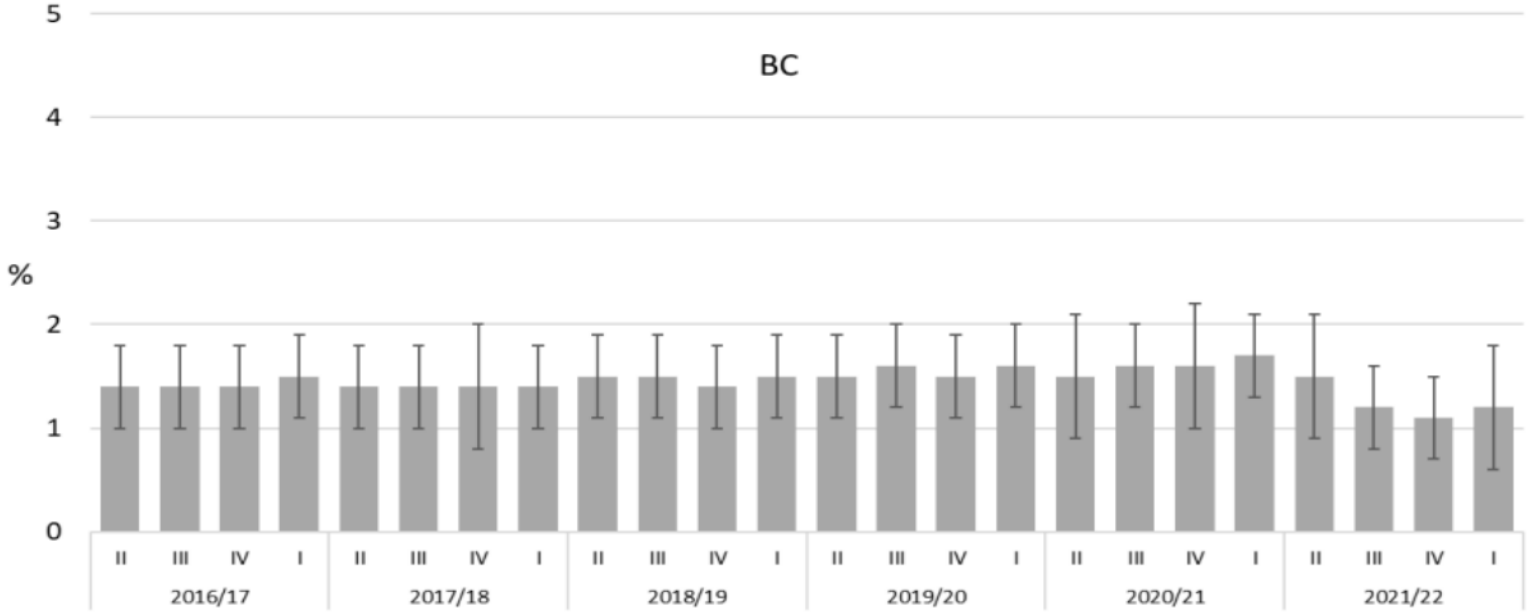


The acute care hospitalization age-standardized rate per 100,000 population aged 75 and older for conditions where appropriate ambulatory care prevents or reduces the need for hospital admission by health authority (moving four quarters as of 2021/22Q3)



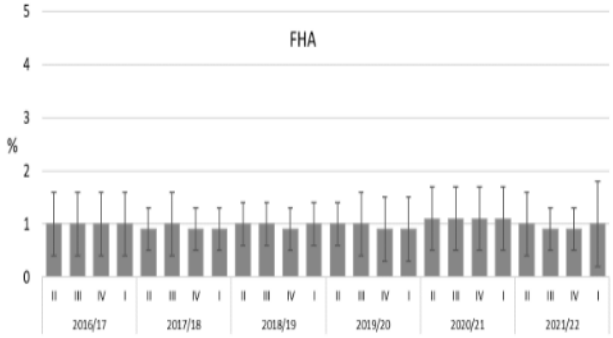
Data for VIHA for 2021/22 Q3 and 2021/22 YTD are incomplete. Consquently, data for B.C. for 2021/22 Q3 and 2021/22 YTD are incomplete.

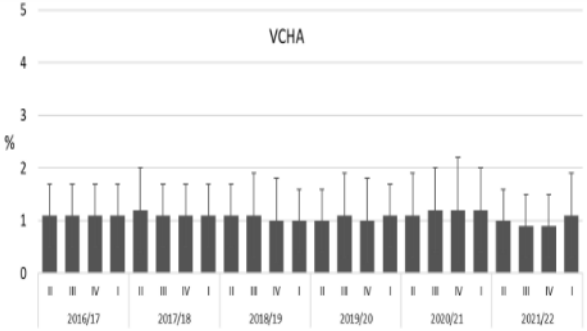
% of ED Discharged Patients Hospitalized within 7 Days of ED Discharge

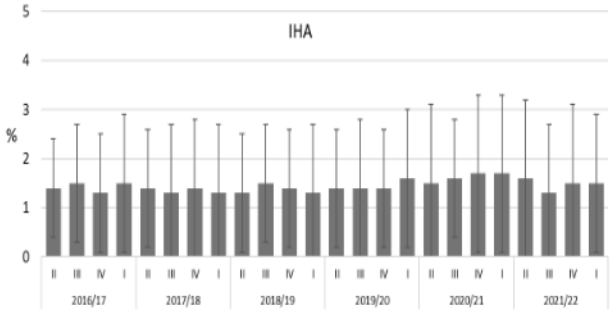


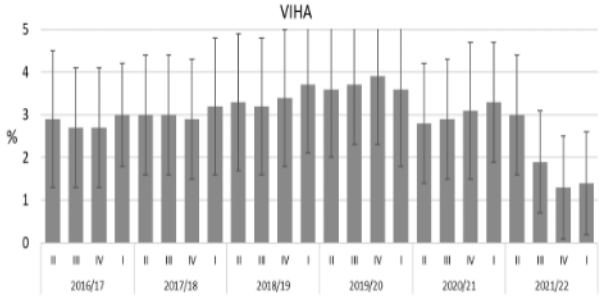
Fiscal Year	2016/17				2017/18				2018/19				2019/20				2020/21				2021/22			
Quarter	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Total ED discharges	348,399	343,117	340,528	345,527	358,153	361,960	347,575	358,053	360,764	361,004	356,392	361,939	365,738	364,265	360,763	339,717	260,484	327,840	291,796	294,154	351,906	387,769	357,537	345,244
ED discharges with hospital admission in 7 days	4,876	4,749	4,670	5,049	5,150	5,149	4,775	5,103	5,335	5,338	5,082	5,545	5,650	5,724	5,511	5,242	4,009	5,117	4,702	4,886	5,296	4,528	3,822	4,077

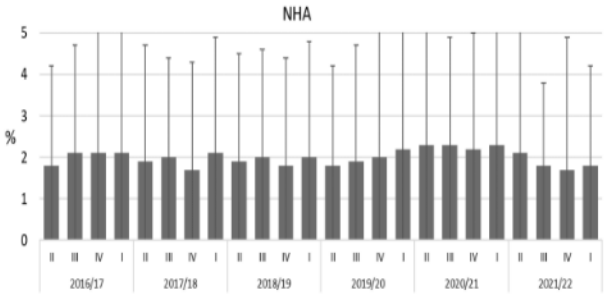
% of ED Discharged Patients Hospitalized within 7 Days of ED Discharge by HA





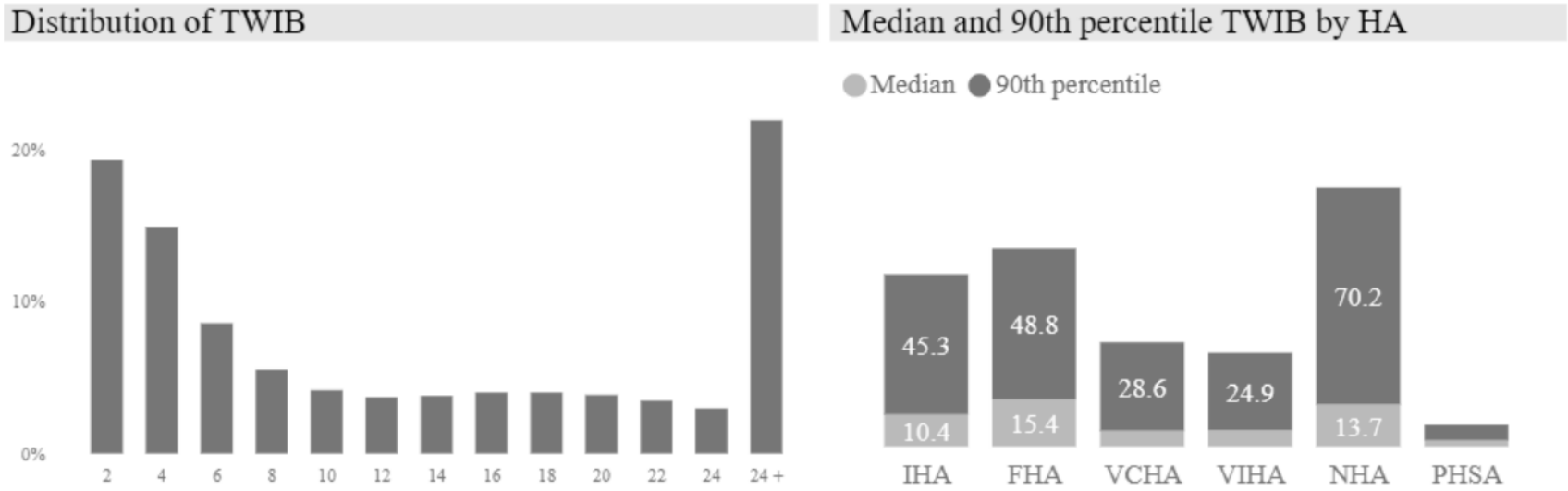






- VIHA and NHA have higher percentage of patients hospitalized within 7 days of ED visit

Time Waiting for an Inpatient Bed



Report purpose:

The overarching intent of the report is to inform on Emergency Department use, demographics and wait-times and function as an interactive, live document that predominantly uses National Ambulatory Care Reporting System (NACRS) data, with supplementary data from the Health Authority Management Information System (HAMIS) and Discharge Abstract Database (DAD).

Audience:

The ED Monitoring Report is intended as an analytical and visual tool for Emergency Services Advisory Committee (ESAC), Health Services Division of the Ministry of Health, and health authority partners.

Report inclusions:

There were 29 facilities in B.C that reported to NACRS for 2014/15 to 2019/20. An additional site came online in 2020/21, resulting in 30 sites currently reporting to NACRS. This report includes information about emergency department visits at NACRS facilities.

Information on inpatient stays are included to provide additional context.

Report exclusions:

Patients treated at facilities not reporting to NACRS and patients receiving care outside of B.C. are excluded from this version of the report.

Scheduled visits reported to NACRS are excluded (e.g. day surgery and clinic visits, or other procedures that take place in and are booked through the ED). However, all ED visits reported from HAMIS include both scheduled and non-scheduled visits.

Additional report notes and resources:

While NACRS reporting covers about 73% of all ED visits throughout BC, these are predominantly at large urban/metro facilities. Caution should be used when applying data in this report to statements about BC as a whole.

NACRS data is available with a two to three month delay. Where data for the partial year 2020/21 is included in this report, the most recently available date is listed.

The admission rate is defined as the number of visits with a visit disposition of "06" or "07" divided by the total number of emergency department visits. These dispositions indicate that the patient is admitted to the ICU (06) or other acute care units (07) of the reporting facility.

The left without being seen rate is defined as the number of visits with a visit disposition of "61", "63", "02" or "03" divided by the total number of emergency department visits. These dispositions indicate the patient left the emergency department after registration or triage but before assessment by a service provider.

The Canadian Triage and Acuity Scale (CTAS) provides triage levels from 1 to 5: Level 1 - Resuscitation, Level 2 - Emergent, Level 3 - Urgent, Level 4 - Less Urgent, Level 5 - Non-Urgent.

Wait time and length of stay benchmarks are provided by the Canadian Association of Emergency Physicians (CAEP). Benchmarks are given for both the median and 90th percentile wait time.

Time to Physician Initial Assessment (TPIA) is the length of time from the earliest of registration or triage time to the time when a patient is first assessed by a physician in the emergency department. Only assessed patients are included when computing median and 90th percentile Time to Physician Initial Assessment.

Time Waiting for an Inpatient Bed (TWIB) is the length of time between when a decision is made to admit a patient (disposition time) and the time when the patient physically leaves the emergency department. Only admitted patients are included when computing median and 90th percentile Time Waiting for an Inpatient Bed.

ED Length of Stay (LOS) is the total length of an emergency department visit from the earliest of registration/triage time to the time when the patient leaves the emergency department.

Midnight inpatient census counts are derived using the DAD. Daily occupancy rates are calculated by dividing midnight inpatient census counts by the quarterly number of available beds reported by HAMIS.

The midnight census count for ED refers to the number of patients who have been admitted as inpatients but are waiting in the ED for an inpatient bed to be ready. The midnight census count for Alternate Level of Care (ALC) refers to paitents who no longer require an acute care inpatient bed and are waiting to go elsewhere. Since only the number of ALC days a patient had is reported in DAD, and not the dates for which they had an ALC status, all ALC days are assumed to occur at the end of the patient's stay. The table expresses ALC and ED patient counts as a percentage of total available beds.

Daily inpatient census counts are reported with a 7 month lag. A latency period of 6 months generally applies to open year DAD data. An additional month lag is applied for creating daily census counts because DAD data contains only discharged patients. All patients that were in hospital on a given day, must have been discharged before the DAD has a record of them. Approximately 94% of patients have a length of stay of 30 days or less.

Date last refreshed:

2022-09-08

Inpatient Analysis: Additional Slides

Prepared: 11 August, 2022

Approach and Assumptions

- **Preliminary analysis of hospitalization trends to inform Fall/Winter 2022/23 Capacity Planning**
- Review of daily census over last 6 years (2016/17-2021/22) to understand seasonal variations and impact of COVID-19 pandemic on BC hospital volumes
- The analyses focus on acute inpatient care including general medical/ surgical care and other acute care, as well as critical care (ICU, HAU, CCU, CSICU)
  - Further analyses will explore critical care trends specifically
- 'What-if' scenarios developed to estimate the potential impact of different trends on inpatient volumes and integrate them into overall Fall/Winter 2022/23 hospital volumes

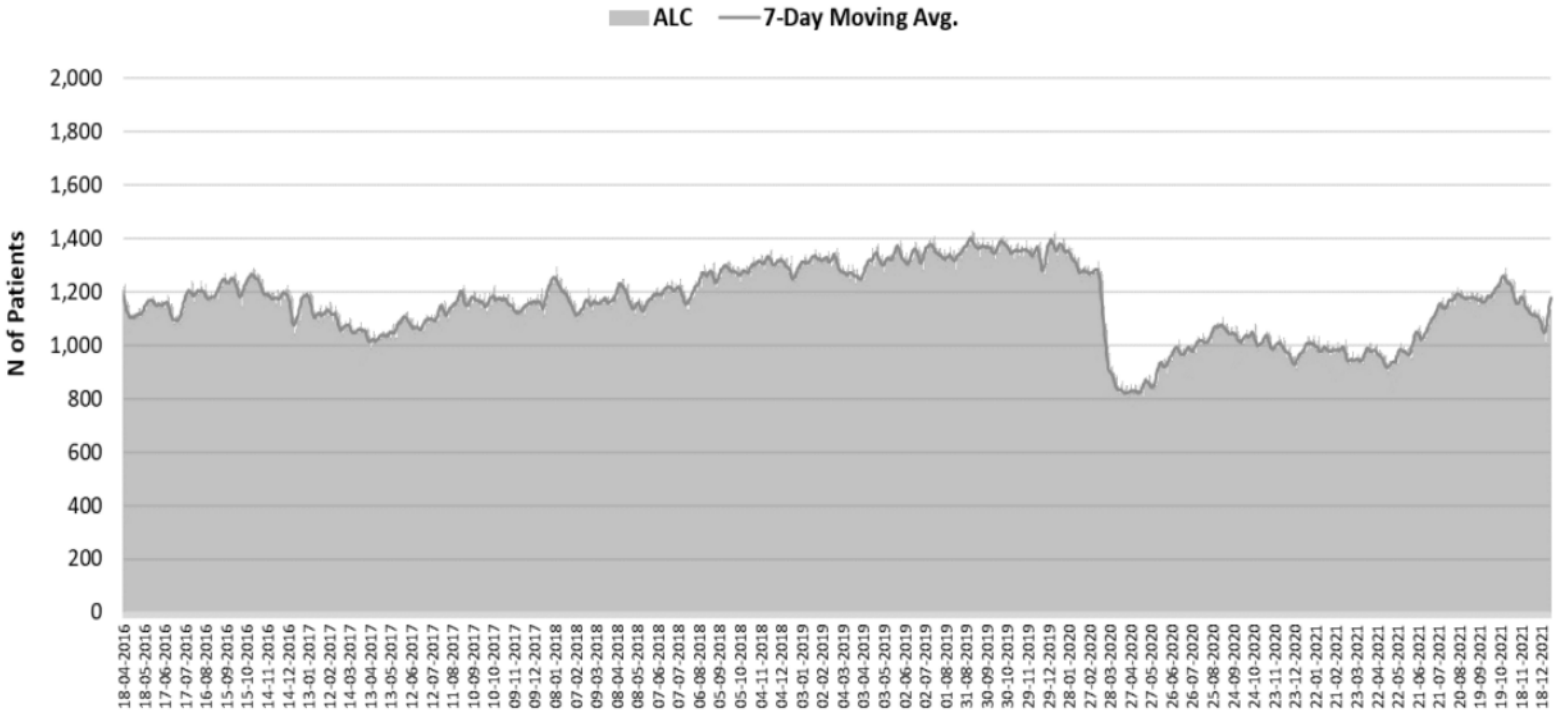
Data Sources and Exclusions

- Study period
  - Acute inpatient hospitalizations from Apr 1, 2016 to Mar 31, 2022
    - Pre-pandemic baseline data: Apr 2016 to Feb 2020
    - Pandemic data: Mar 2020 to Dec 2021
  - HA-reported census data and COVID-19 positive patients from Aug 1, 2020 to Aug 1, 2022
- Data sources
  - Discharge Abstract Database (DAD)
  - Provincial COVID-19 Monitoring Solution (PCMS)
  - HA-reported Daily Census Data
- Exclusions: newborn, non-BC hospital admissions, stillborn and cadaver cases

Estimating Demand - Modelling Approach

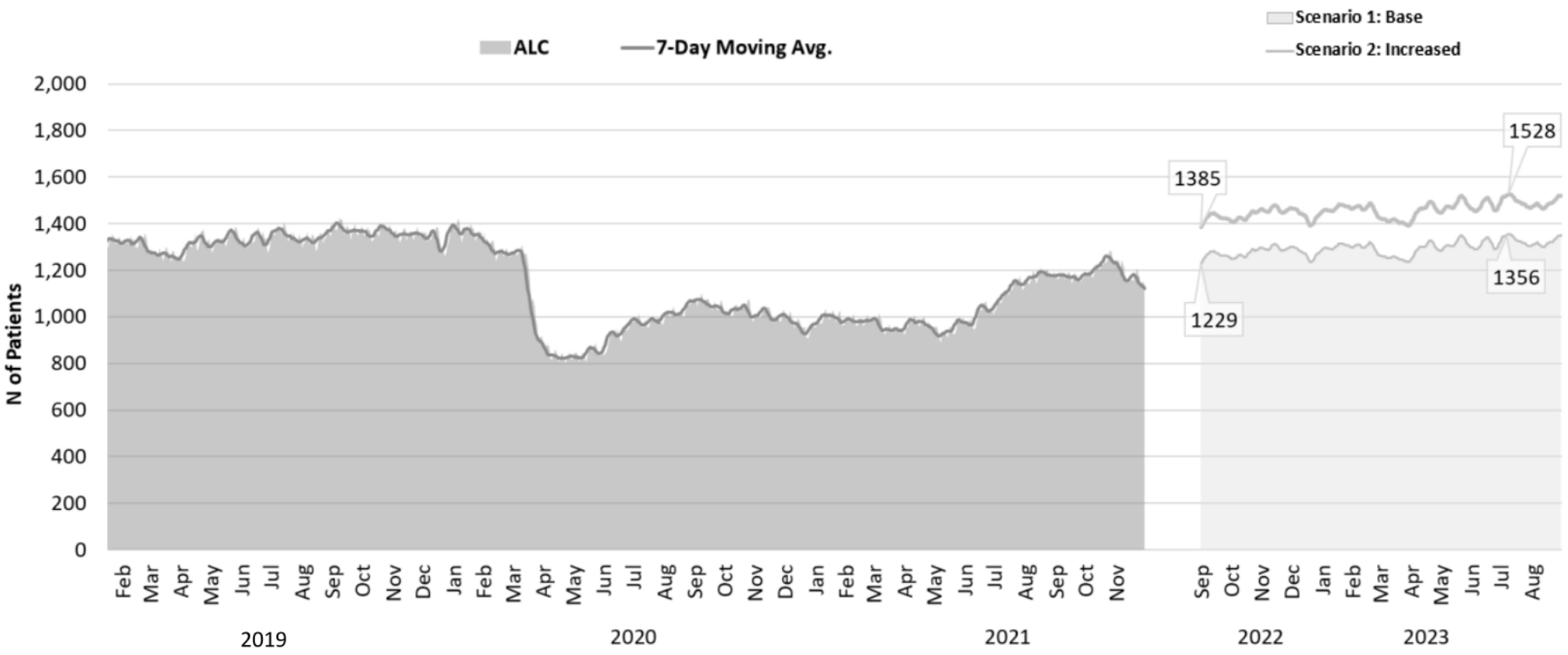
- To estimate the Fall/Winter 2022/23 census scenarios, two scenarios for each condition are considered:
  - Scenario 1: Base
    - Inpatient census estimated using “typical” variations before COVID-19 pandemic and applied to recent volume trends
  - Scenario 2: Increased
    - Inpatients census variations during the highest-volume months over the last 6 years applied to recent volume trends
- Note: additional estimates are provided for respiratory diseases
  - Four scenarios are presented that model the interplay of COVID-19 and other respiratory conditions (see slide 11)
- These scenarios are then combined to create overall system projections for the Fall/Winter 2022/23

ALC Inpatient BC Census Trend
Apr 2016 – Dec 2021

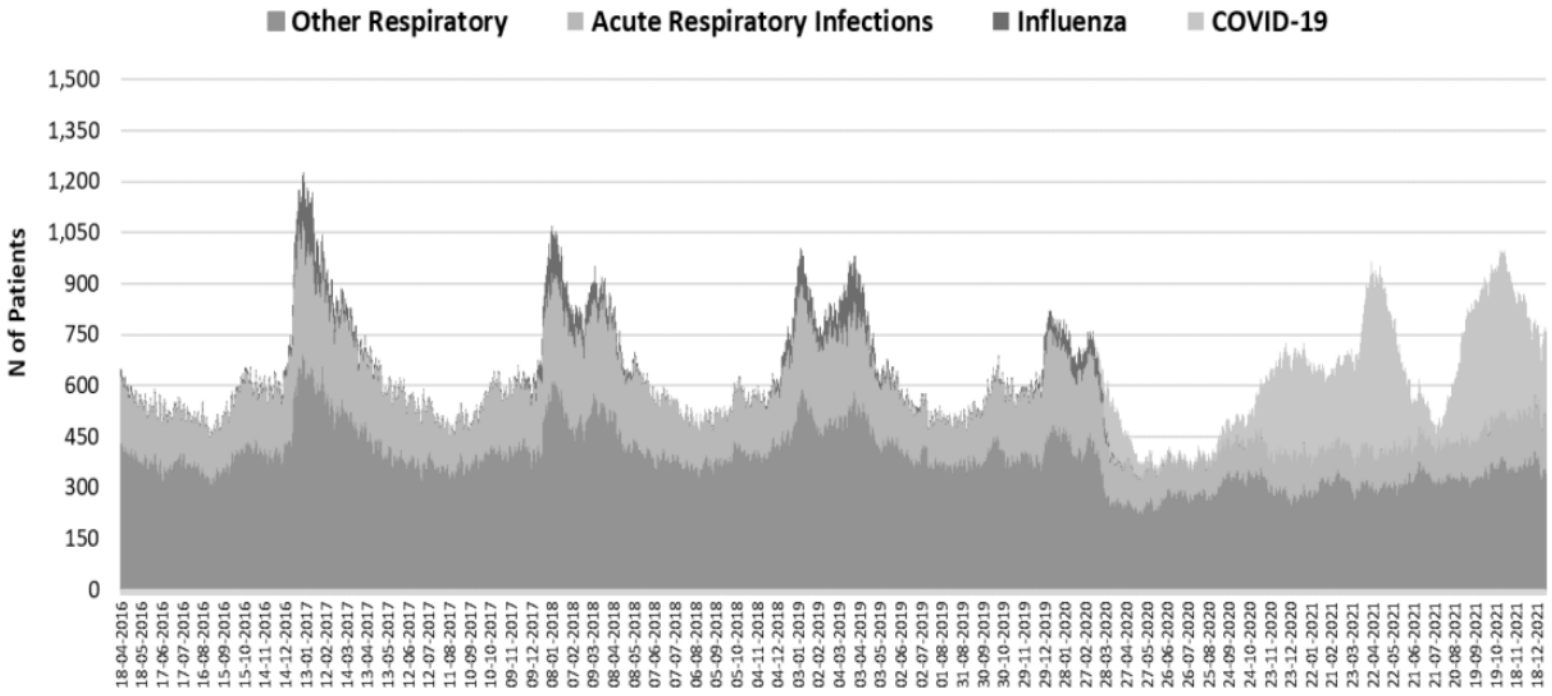


- The graph shows historical ALC volume trends by day
- There is a steady gradual increase in ALC volumes pre-pandemic (i.e., from April 2016 to Mar 2020)
- A significant decrease in ALC census is observed during early COVID-19 pandemic months, but trends back to pre-pandemic historical levels recently

Estimated Demand – ALC Census



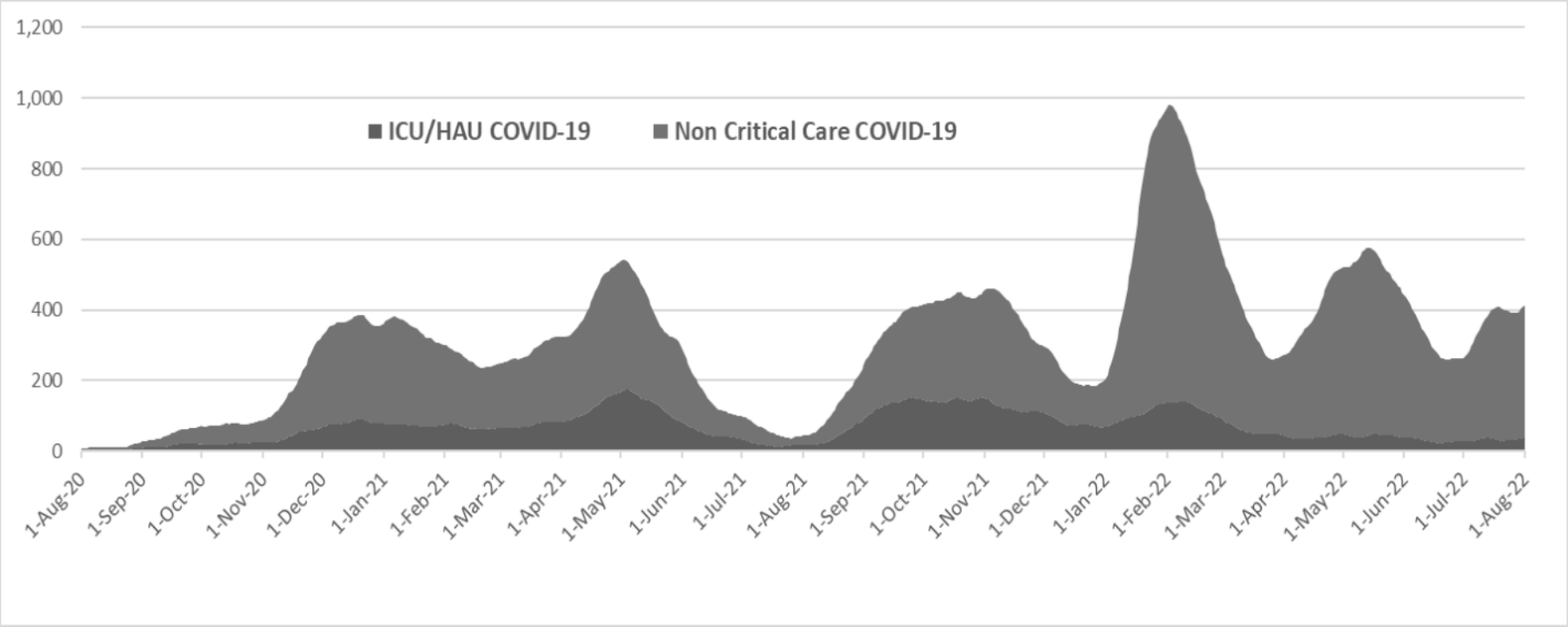
Respiratory* Inpatient BC Census Trends Apr 2016 – Dec 2021



* The most responsible diagnosis (MRDx) is used to identify respiratory disease and COVID cases.

- The number of cases of influenza, acute respiratory infections, and other respiratory illnesses in BC varied substantially from season to season
- Respiratory illnesses typically begin to increase in Nov and remain at elevated levels between Dec and Apr. The 2017–2020, pre-pandemic, seasons are characterized by two consecutive waves
- Overall respiratory cases decreased substantially during the 2020-2021 COVID-19 pandemic period
- During the pandemic – with public health measures - the overall census of COVID-19 plus other respiratory infections did not reach pre-pandemic respiratory volumes
- This is as a result of lower other respiratory conditions during the pandemic

Seasonal Patterns of COVID-19 BC Census Aug 2020 to July 2022

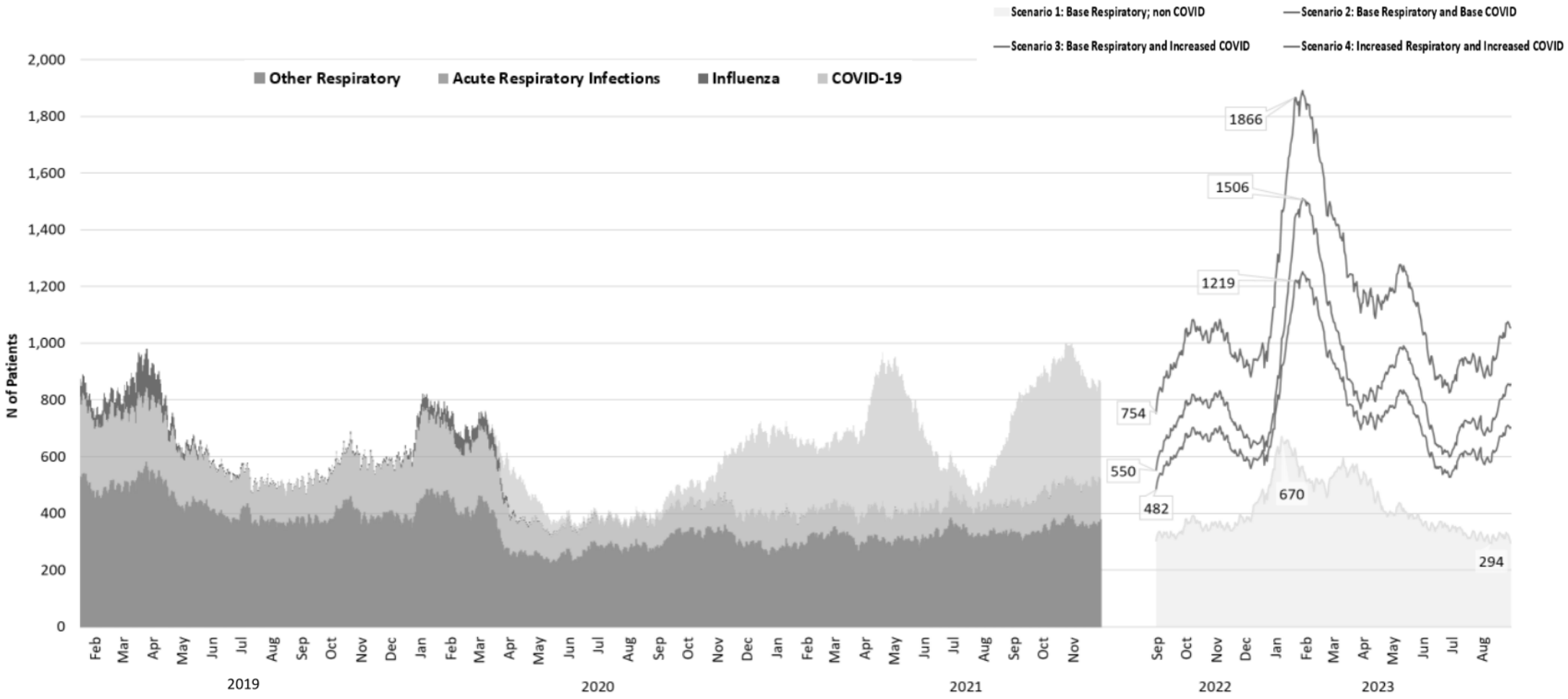


- To date, the COVID-19 surges do not follow respiratory surge seasonal patterns (i.e., in Dec and Apr). Rather, there are more frequent surges during the year with COVID-19 with less pronounced decreases (e.g., “lows”) in cases between waves.

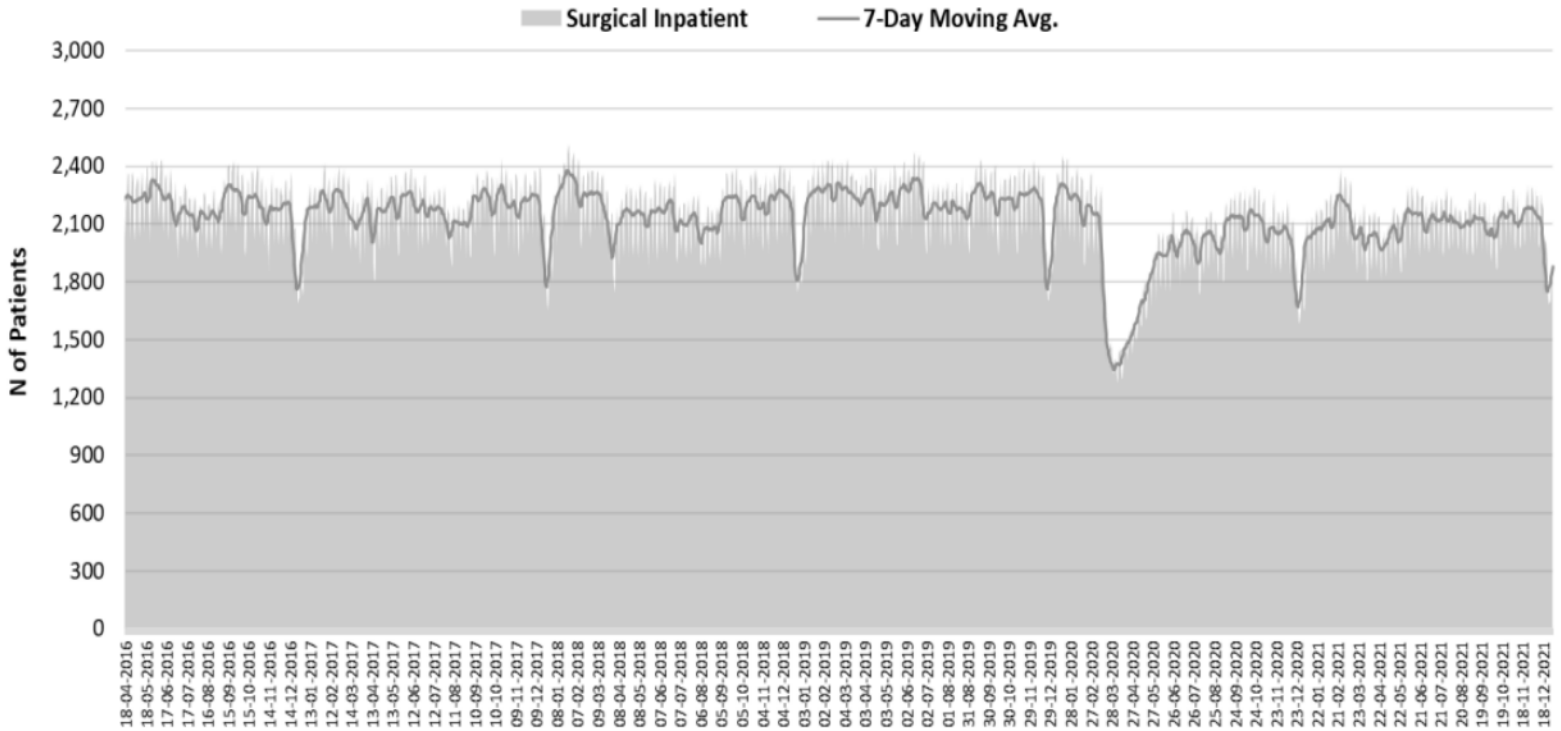
Modelling Scenarios - Respiratory Disease

- Fall/Winter 2022/23 census for respiratory diseases estimated using four (2*2) scenarios
  - Scenario 1: Base Respiratory; excluding COVID
  - Scenario 2: Base Respiratory and Base COVID (e.g., using Delta variant wave as reference)
  - Scenario 3: Base Respiratory with Increased COVID (e.g., using Omicron variant wave as reference)
  - Scenario 4: Increased Respiratory and Increased COVID
- Early data from Australia indicate that the respiratory season is equivalent to pre-pandemic levels and may start earlier than prior years

Estimated Demand – Respiratory/COVID-19 Census

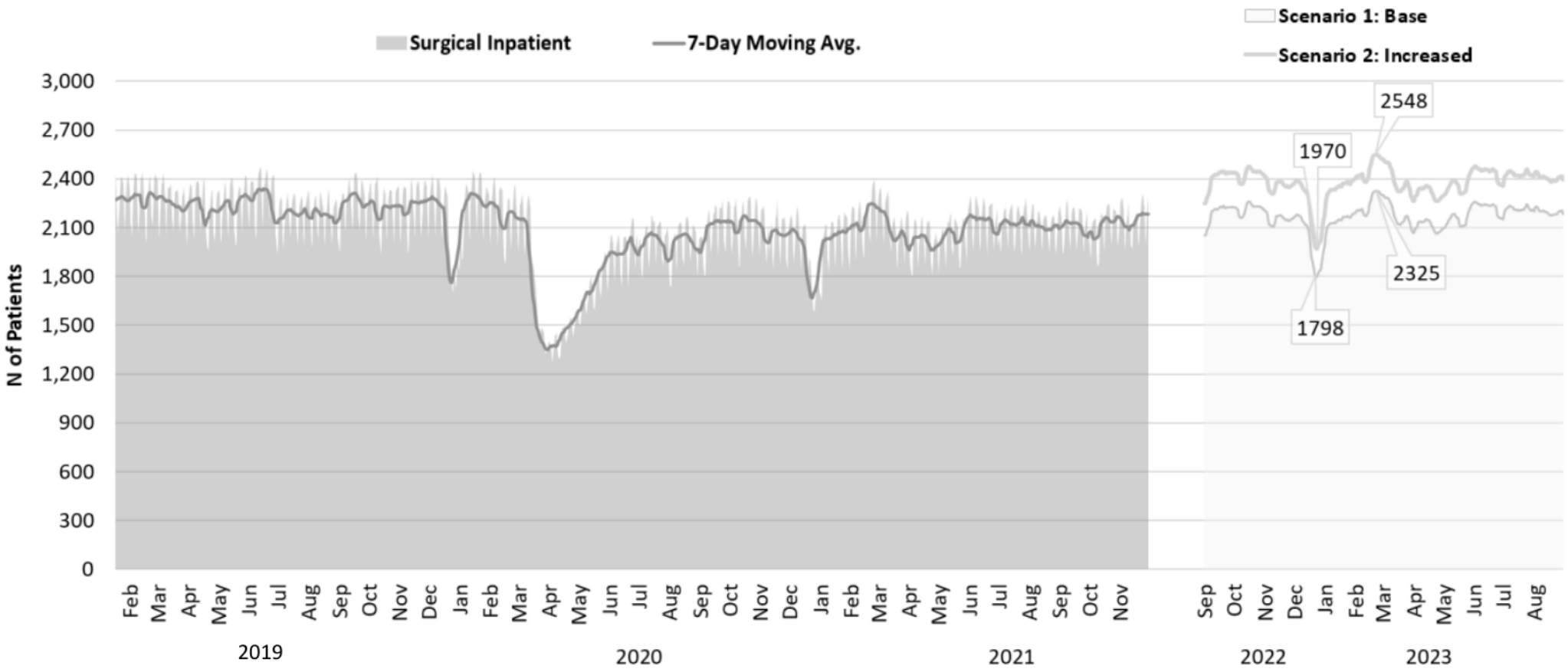


Surgical Inpatient BC Census Trend Apr 2016 – Dec 2021

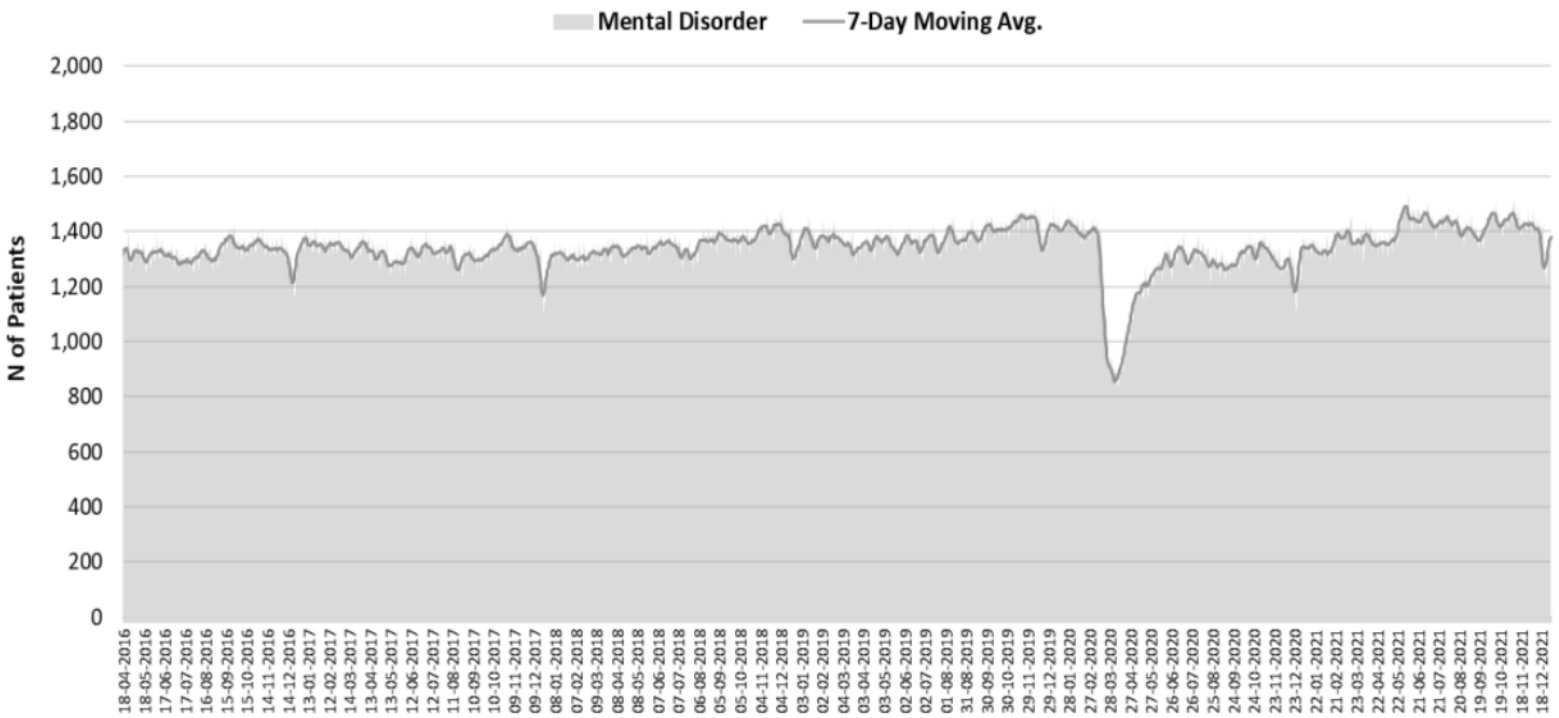


- Prior to the COVID-19 pandemic, 2100-2400 surgical inpatients in BC hospitals per day
- In 2020–2021, the number of surgical inpatients decreased by ~15% from pre-pandemic historical level
- Delayed/cancelled surgeries related to responding to the COVID-19 pandemic likely influenced this year-over-year decrease

Estimated Demand - Surgical Inpatient

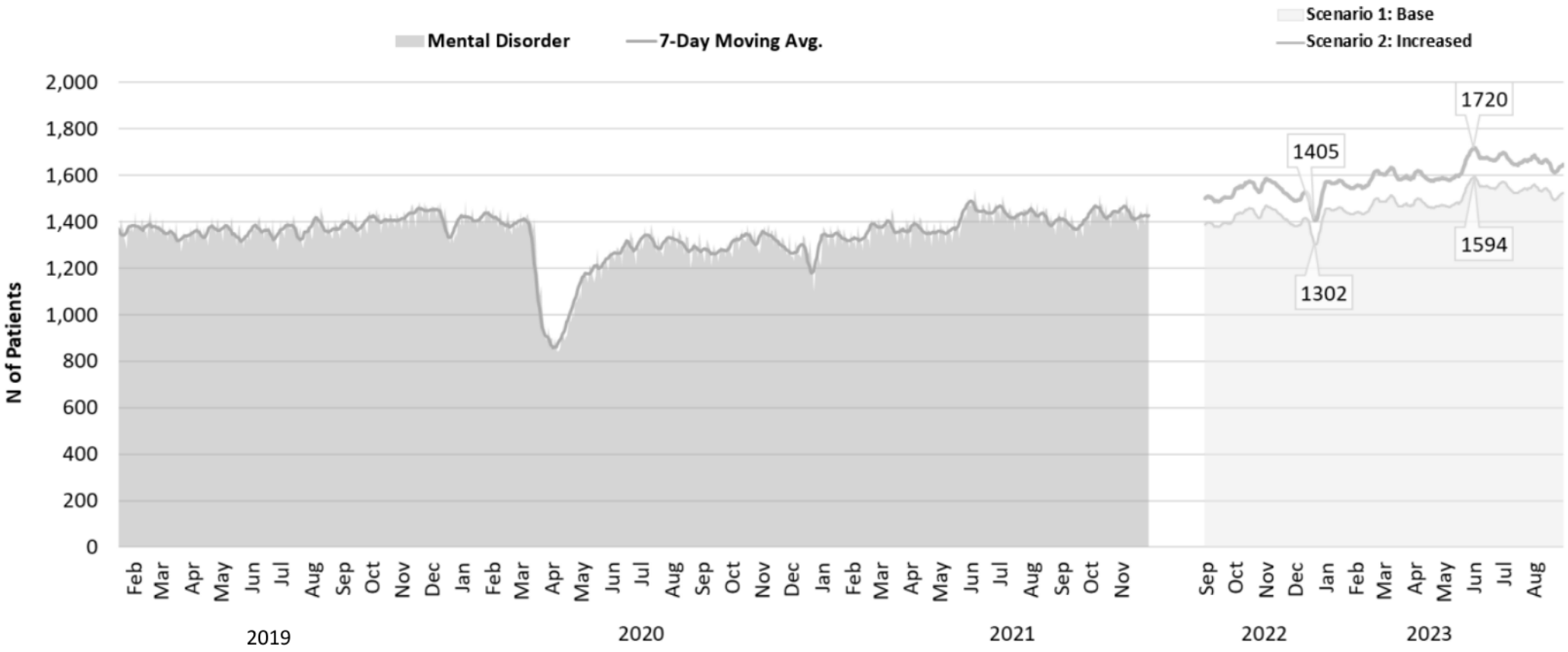


Mental Health Inpatient BC Census
Apr 2016 – Dec 2021



- Mental health disorders census in BC hospitals demonstrated steady gradual increase from 2016/17
- After an early pandemic decrease, the mental disorder census continued to increase to levels higher than pre-pandemic
- The highest level at ~1,500 hospitalizations per day is observed in fall 2019, summer and fall 2021
- More recently this increase is related to increased mental disorder admissions rather than longer hospital stay

Estimated Demand – Mental Disorder Inpatient



Appendix

- Summary of Scenarios by Condition at Peak Census
- BC and HA: Average ALC Census by Condition
- Length of Stay in Hospital (LOS)
- IQR (interquartile range) is the difference between the upper quartile (the 75th percentile) and the lower quartile (the 25th percentile) of the data.

Summary of Scenarios by Condition at Peak Census

Condition	Actual Maximum Census							Estimated Maximum Census		
	Fall/Winter 2016/17[1]	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20[2]	Fall/Winter 2020/21	Fall 2021[3]	Fall/Winter 2021/22[4]	Base Fall/Winter 2022/23	Moderate Fall/Winter 2022/23	Increased Fall/Winter 2022/23
COVID-19 MRDx	--	--	--	--	552	476	1,036	477	600	1,036
ALC	1,286	1,290	1,388	1,424	1,102	1,270	1,238	1,334	1,404	1,503
Influenza	153	134	140	61	2	1	1	42	62	70
Acute Respiratory Infection	402	302	313	295	124	160	156	203	301	340
Other Respiratory Disease	654	570	546	448	339	354	345	425	628	710
Inpatient Surgery	2,235	2,288	2,235	2,261	2,209	2,103	2,050	2,213	2,282	2,302
Mental Disorder	1,091	1,065	1,082	1,107	1,172	1,140	1,112	1,257	1,299	1,356
All Other Medical Conditions	4,060	3,979	3,956	4,001	3,925	3,935	3,837	3,979	4,001	4,060
Total Hospital Census	**9,211**	**9,132**	**9,178**	**9,193**	**8,627**	**9,092**	**9,030**	**9,433**	**10,048**	**10,415**

[1] Fall/Winter season includes period from beginning-of-September to end-of-May

[2] Fall/Winter 2019/20 ends at the end of Feb 2020, before COVID-19 epidemic starts

[3] Fall 2021, from Sep 2021 to end-of-Nov 2021, is based on DAD data and includes Delta VOC

[4] Fall/Winter 2021/22, from Sep 2021 to end-of-May 2022, is based on HA-reported census and PCMS data and includes Omicron VOC data

IHA and FHA: Average ALC Census by Condition

HA	ALC/Condition Combination	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22
IHA	Non-ALC	1,205	1,179	1,186	1,205	1,157	1,255	82%	83%	81%	81%	85%	83%
IHA	ALC, Other Medical Conditions	158	155	174	183	125	164	62%	62%	63%	66%	62%	63%
IHA	ALC and COVID MRDx	--	--	--	--	2	6	0%	0%	0%	0%	1%	2%
IHA	ALC and Respiratory	15	17	15	14	7	9	6%	7%	5%	5%	4%	4%
IHA	ALC and Inpatient Surgery	38	38	42	41	26	36	15%	15%	15%	15%	13%	14%
IHA	ALC and MH Disorder	41	36	40	35	38	43	16%	15%	14%	13%	19%	16%
IHA	ALC, Inpatient Surgery and MH Disorder	4	3	3	4	3	2	1%	1%	1%	1%	1%	1%
IHA	ALC and Other Comb Conditions	1	1	1	1	1	--	1%	0%	1%	0%	1%	0%
IHA	Total ALC Census	257	250	275	279	202	260	18%	17%	19%	19%	15%	17%
IHA	Total Census	1,461	1,429	1,461	1,484	1,359	1,515						

HA	ALC/Condition Combination	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22
FHA	Non-ALC	2,363	2,384	2,393	2,376	2,341	2,514	85%	86%	85%	84%	88%	87%
FHA	ALC, Other Medical Conditions	264	262	274	291	213	250	64%	65%	65%	64%	67%	66%
FHA	ALC and COVID MRDx	--	--	--	--	5	3	0%	0%	0%	0%	2%	1%
FHA	ALC and Respiratory	21	20	22	20	11	18	5%	5%	5%	4%	3%	5%
FHA	ALC and Inpatient Surgery	39	34	34	39	26	41	9%	8%	8%	8%	8%	11%
FHA	ALC and MH Disorder	83	80	83	100	58	65	20%	20%	20%	22%	18%	17%
FHA	ALC, Inpatient Surgery and MH Disorder	4	4	4	5	3	4	1%	1%	1%	1%	1%	1%
FHA	ALC and Other Comb Conditions	2	2	1	1	1	1	0%	0%	0%	0%	0%	0%
FHA	Total ALC Census	412	401	419	456	317	381	15%	14%	15%	16%	12%	13%
FHA	Total Census	2,775	2,785	2,812	2,833	2,657	2,895						

VCHA and VIHA: Average ALC Census by Condition

HA	ALC/Condition Combination	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22
VCHA	Non-ALC	1,864	1,836	1,832	1,784	1,725	1,851	93%	93%	92%	92%	93%	92%
VCHA	ALC, Other Medical Conditions	76	73	89	91	70	87	52%	52%	55%	57%	52%	52%
VCHA	ALC and COVID MRDx	--	--	--	--	3	3	0%	0%	0%	0%	2%	2%
VCHA	ALC and Respiratory	7	6	8	7	6	10	5%	4%	5%	4%	4%	6%
VCHA	ALC and Inpatient Surgery	21	20	23	20	19	24	14%	15%	14%	13%	14%	15%
VCHA	ALC and MH Disorder	39	36	39	38	35	38	26%	26%	24%	24%	26%	23%
VCHA	ALC, Inpatient Surgery and MH Disorder	3	3	3	2	2	4	2%	2%	2%	1%	1%	2%
VCHA	ALC and Other Comb Conditions	1	1	1	1	1	1	1%	1%	1%	1%	1%	1%
VCHA	Total ALC Census	147	139	164	159	136	166	7%	7%	8%	8%	7%	8%
VCHA	Total Census	2,011	1,975	1,996	1,943	1,861	2,017						

HA	ALC/Condition Combination	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22
VIHA	Non-ALC	1,445	1,473	1,545	1,561	1,469	1,544	86%	85%	84%	84%	87%	86%
VIHA	ALC, Other Medical Conditions	127	158	164	174	140	153	56%	59%	57%	60%	62%	59%
VIHA	ALC and COVID MRDx	--	--	--	--	1	1	0%	0%	0%	0%	0%	0%
VIHA	ALC and Respiratory	10	10	17	9	4	8	5%	4%	6%	3%	2%	3%
VIHA	ALC and Inpatient Surgery	25	29	30	31	23	22	11%	11%	10%	11%	10%	8%
VIHA	ALC and MH Disorder	58	66	70	71	54	71	26%	24%	24%	24%	24%	27%
VIHA	ALC, Inpatient Surgery and MH Disorder	5	5	8	6	4	5	2%	2%	3%	2%	2%	2%
VIHA	ALC and Other Comb Conditions	1	1	1	1	1	1	0%	0%	1%	0%	0%	0%
VIHA	Total ALC Census	226	268	291	291	226	260	14%	15%	16%	16%	13%	14%
VIHA	Total Census	1,671	1,741	1,835	1,852	1,695	1,804						

NHA and BC: Average ALC Census by Condition

HA	ALC/Condition Combination	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22
NHA	Non-ALC	432	455	437	429	406	415	81%	80%	74%	72%	78%	77%
NHA	ALC, Other Medical Conditions	59	73	101	109	82	86	59%	65%	65%	65%	70%	68%
NHA	ALC and COVID MRDx	--	--	--	--	2	2	0%	0%	0%	0%	1%	2%
NHA	ALC and Respiratory	3	7	4	6	2	3	3%	6%	3%	4%	2%	2%
NHA	ALC and Inpatient Surgery	9	7	11	13	12	7	9%	6%	7%	8%	10%	6%
NHA	ALC and MH Disorder	26	22	36	36	16	23	26%	20%	23%	21%	14%	18%
NHA	ALC, Inpatient Surgery and MH Disorder	2	1	3	3	3	6	2%	1%	2%	2%	2%	4%
NHA	ALC and Other Comb Conditions	1	1	--	1	--	--	1%	1%	0%	1%	0%	0%
NHA	Total ALC Census	100	112	155	168	117	127	19%	20%	26%	28%	22%	23%
NHA	Total Census	532	568	592	597	523	543						

HA	ALC/Condition Combination	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22	Fall/Winter 2016/17	Fall/Winter 2017/18	Fall/Winter 2018/19	Fall/Winter 2019/20	Fall/Winter 2020/21	Fall/Winter 2021/22
BC	Non-ALC	7,309	7,327	7,392	7,355	7,097	7,579	87%	86%	85%	84%	88%	86%
BC	ALC, Other Medical Conditions	684	721	803	849	630	739	60%	62%	62%	63%	64%	62%
BC	ALC and COVID MRDx	--	--	--	--	10	14	0%	0%	0%	0%	1%	1%
BC	ALC and Respiratory	57	60	66	56	29	48	5%	5%	5%	4%	3%	4%
BC	ALC and Inpatient Surgery	131	128	141	144	105	130	12%	11%	11%	11%	11%	11%
BC	ALC and MH Disorder	245	241	268	280	203	239	22%	21%	21%	21%	20%	20%
BC	ALC, Inpatient Surgery and MH Disorder	16	15	20	19	13	20	1%	1%	2%	1%	1%	2%
BC	ALC and Other Comb Conditions	3	3	3	2	2	1	0%	0%	0%	0%	0%	0%
BC	Total ALC Census	1,137	1,168	1,301	1,350	992	1,191	13%	14%	15%	16%	12%	14%
BC	Total Census	8,446	8,495	8,693	8,705	8,088	8,770						

The Median (IQR) Length of Hospital Stay by Patient Group

Group	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Surgical Inpatient	3 (2-6)	3 (2-6)	3 (2-6)	3 (2-6)	3 (2-6)	3 (2-6)	3 (1-5)	3 (1-5)	2 (1-5)	2 (1-6)
Non-surgical Inpatient	3 (1-8)	3 (1-8)	3 (1-8)	3 (1-8)	3 (1-8)	3 (1-8)	3 (1-8)	3 (1-8)	3 (2-8)	4 (2-9)
Mental Disorder	7 (2-19)	7 (2-18)	6 (2-18)	6 (2-17)	6 (2-18)	5 (2-16)	5 (2-16)	5 (2-15)	5 (2-14)	5 (2-14)
ALC	10 (4-26)	11 (5-26)	11 (4-26)	11 (5-28)	10 (4-24)	9 (4-23)	10 (4-24)	9 (4-25)	9 (4-21)	9 (4-21)
All Acute Inpatient	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-8)**

The Median (IQR) Length of Hospital Stay by Age Group

Age group	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
0-4 Years	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)
5-17 Years	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)
18-39 Years	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)	2 (1-4)
40-59 Years	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-7)
60-69 Years	4 (2-8)	3 (2-8)	4 (2-8)	4 (2-8)	3 (2-8)	3 (2-8)	3 (2-7)	3 (2-8)	3 (2-7)	4 (2-8)
70-79 Years	4 (2-10)	4 (2-10)	4 (2-10)	4 (2-9)	4 (2-9)	4 (2-9)	4 (2-9)	4 (2-9)	4 (2-9)	4 (2-10)
80+ Years	6 (3-14)	6 (3-14)	6 (3-14)	6 (3-14)	6 (3-13)	6 (3-13)	6 (3-13)	6 (3-13)	6 (3-12)	6 (3-14)
Total	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-8)**

The Median (IQR) Length of Hospital Stay by Major Clinical Category

Major Clinical Categories	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Other Reasons for Hospitalization	9 (3-25)	9 (3-25)	9 (3-23)	8 (2-23)	8 (2-22)	8 (2-22)	8 (2-22)	8 (2-22)	7 (2-20)	8 (3-22)
Multisystem or Unspecified Site Infections	5 (2-12)	6 (2-12)	6 (3-12)	6 (3-12)	6 (2-12)	6 (3-12)	6 (3-12)	6 (3-12)	6 (3-12)	6 (3-13)
Burns	4 (1-12)	4 (1-10)	4 (1-14)	4 (1-13)	4 (1-14)	4 (1-12)	4 (1-13)	5 (1-12)	4 (1-13)	6 (1-17)
Mental Diseases and Disorders	6 (2-18)	6 (2-17)	6 (2-17)	5 (2-17)	6 (2-17)	5 (2-16)	5 (2-15)	5 (1-15)	5 (2-13)	5 (2-14)
Dis. of the Respiratory System	5 (2-10)	5 (2-9)	5 (2-9)	5 (2-9)	5 (2-9)	5 (2-9)	5 (2-9)	5 (2-9)	5 (2-10)	5 (2-10)
Dis. of the Blood and Lymphatic System	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-9)	4 (2-8)	4 (2-9)	4 (2-9)	4 (2-9)
Dis. of the Circulatory System	4 (2-8)	3 (1-7)	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-8)	4 (2-7)	4 (2-8)
Dis. of the Hepatobiliary System and Pancreas	4 (2-8)	4 (2-7)	4 (2-7)	4 (2-7)	4 (2-7)	4 (2-7)	4 (2-7)	4 (2-7)	4 (2-7)	4 (2-8)
Dis. of the Nervous System	4 (2-11)	4 (2-11)	4 (2-11)	4 (2-11)	4 (2-10)	4 (2-10)	4 (2-10)	4 (2-10)	4 (2-9)	4 (2-10)
Significant Trauma, Injury, Poisoning and Toxic Effect of Drugs	3 (1-9)	3 (1-9)	4 (1-9)	4 (1-9)	4 (1-9)	4 (1-9)	4 (1-9)	4 (1-9)	4 (1-8)	4 (1-9)
Dis. of the Skin, Subcutaneous Tissue and Breast	3 (1-8)	3 (1-8)	3 (1-8)	3 (1-9)	3 (1-8)	4 (1-9)	4 (1-9)	4 (1-9)	4 (1-9)	4 (1-10)
Dis. of the Endocrine System, Nutrition and Metabolism	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)
Dis. of the Kidney, Urinary Tract and Male Reproductive System	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)
Dis. of the Digestive System	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)	3 (1-6)
Newborns and Neonates With Conditions in the Perinatal Period	3 (1-8)	3 (1-9)	2 (1-8)	2 (1-7)	2 (1-7)	2 (1-6)	2 (1-7)	2 (1-7)	2 (1-6)	2 (1-7)
Dis. of the Musculoskeletal System and Connective Tissue	3 (2-6)	3 (2-6)	3 (2-6)	3 (2-5)	3 (2-5)	3 (2-5)	2 (2-4)	2 (1-4)	2 (1-4)	2 (1-5)
Dis. of the Ear, Nose, Mouth and Throat	1 (1-3)	1 (1-3)	1 (1-3)	1 (1-3)	1 (1-3)	1 (1-3)	1 (1-4)	1 (1-3)	1 (1-3)	2 (1-4)
Pregnancy and Childbirth	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)
Dis. of the Eye	1 (1-3)	1 (1-4)	1 (1-3)	1 (1-3)	1 (1-4)	2 (1-4)	2 (1-5)	2 (1-4)	1 (1-4)	1 (1-4)
Dis. of the Female Reproductive System	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-2)	1 (1-2)	1 (1-2)	1 (1-2)	1 (1-2)	1 (1-2)
Misc. CMG and Ungroupable Data	1 (1-1)	1 (1-1)	1 (1-1)	1 (1-1)	1 (1-1)	1 (1-1)	1 (1-1)	1 (1-3)	1 (1-2)	1 (1-1)
All Acute Inpatients	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-7)**	**3 (1-8)**

Emergency Physician Lead

Goal:

-position will be staffed by senior emergency physicians who have a good understanding of the functioning of the department and the hospital, and have excellent leadership and communication skills
-improve the efficiency of the emergency department by working with the charge and triage nurses to optimize patient flow and care
-by taking on this role, reduce the burdens and frustrations of the emergency team allowing them to direct their time and energy to patient care

Roles:

-the EPL will be a physician in a leadership role working together with the PCC to help manage patient flow and support the physicians on shift in the emergency department
-they will be the primary contact for departmental issues for the triage nurse and PCC
-attend bed meeting with the PCC to better understand the overall bed availability in the hospital and to help the PCC advocate for transfer of admitted patients to the floor
-work with the PCC to initiate surge protocol when appropriate
-be available to triage to help with difficult triage decisions and ordering directed investigations when appropriate beyond the nurse initiated diagnostics, both for patients at triage and those waiting with BCAS
-work with the PCC to optimize use of chairs, stretchers and monitored beds
-review all ECG's from triage
-take all referral phone calls from sending physicians
-providing support and advice to colleagues regarding outpatient resources that could potentially help avoid an admission (will be particularly valuable to locums and newer hires)
-direct physician resources to zones requiring more support
-help with consultant service issues-ie excessive time for patient to be seen, direct referrals that have had no investigations ordered, resolving MRP issues between two services
-assessing admitted patients with long stays in the department waiting for a bed that now may meet discharge criteria-PCC's should be able to identify these then the EPL can review with the MRP
-aid in the repatriation of patients to other sites, currently something that is often left to the attending nurse
-as the position develops it would be expected that there may be additional roles.

Prepared by: Dr. S. Keith Hutchison, August 10, 2022

Emergency Department and Hospital Capacity Task Group

AGENDA

September 22, 2022, 1100 – 1300 (120 minutes)

Participants:

Ministry of Health	**Health Authorities**	**Guests**
Stephen Brown, Deputy Minister of Health Kristy Anderson, Chair Leah Smith Leann Cairns Donna Wilkinson **Secretariat**: Leslie Halston	VCHA: Michelle de Moor PHC: Norm Peters FHA: Laurie Leith, Dermot Kelly **(regrets)** NHA: Penny Anguish IHA: Shallen Letwin, Diane Shendruk VIHA: Marko Peljhan BCEHS: Leanne Heppell PHSA: Susan Wannamaker	

1.0 Call to Order			**Lead**	**Objective**
15 minutes	1.1	Roundtable Introductions	Kristy Anderson, ADM, Hospital & Provincial Health Services	
2.0 Welcome and Purpose of the Task Group			**Lead**	**Objective**
20 minutes	2.1	a) Provide direction on purpose of the Task Group	Stephen Brown, Deputy Minister of Health	
3. Information/Paper Items			**Lead**	**Objective**
5 minutes	3.1		Leann	**√**

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Withheld pursuant to/removed as

s.13

RE: Agenda for Emergency Department and Hospital Capacity Task Group Meeting; Sept 22, 11am -1pm

From: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
To: Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>, Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>, Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>
Sent: September 20, 2022 2:28:17 PM PDT
Attachments: Agenda for First Meeting 22.09.20 v2.docx

Here is the final – ready for distribution

From: Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>
Sent: September 20, 2022 2:22 PM
To: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>; Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>; Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>
Subject: RE: Agenda for Emergency Department and Hospital Capacity Task Group Meeting; Sept 22, 11am -1pm

Agenda incorporates Leann and my edits. The PPT has minor changes to font.

With appreciation,

Donna

From: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>
Sent: September 20, 2022 2:04 PM
To: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>; Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>
Cc: Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>
Subject: RE: Agenda for Emergency Department and Hospital Capacity Task Group Meeting; Sept 22, 11am -1pm

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From: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
Sent: September 20, 2022 1:47 PM
To: Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>; Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>
Cc: Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>
Subject: Agenda for Emergency Department and Hospital Capacity Task Group Meeting; Sept 22, 11am -1pm
Importance: High

Hello Leslie,

Please find the agenda for the Thursday's meeting attached. Leann or Donna, can I ask that one of you take a quick review for any glaring typos?

Kind regards, Leah

Leah M Smith *(she / her / hers)*
A/Executive Director, Hospital Services Branch
Hospital and Provincial Health Services Division, Ministry of Health

Office: 778 698 1340
Mobile: 778 678 3207
Email: leah.smith@gov.bc.ca

Emergency Department and Hospital Capacity Task Group

Agenda – Meeting 1

Thursday, Sept 22 (120 mins)
11:00 am – 1 pm, MS Teams

1. **Roundtable Introductions**
   Lead: Kristy Anderson, ADM, Hospital & Provincial Health Services Division
   Time: 15 mins

2. **Welcome and Purpose of the Task Group**
   Lead: Stephen Brown, Deputy Minister of Heath
   Objective: Provide direction on purpose of the Task Group
   Time: 20 mins (35 mins)

3. **Transition from Emergency Services Advisory Committee (ESAC) to ED and Critical Care Health Improvement Networks (HINs)**
   Lead: Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation Ministry of Health
   Objective: Provide update on the vision for the HINs and linkages to the work of the Task Group
   Time: 15 mins (50 mins)

4. **Doctors of BC**
   Lead: Drs. Gord McInnes, Quynh Doan, Steven Fedder (regrets), Emergency Medicine Section, Co-presidents
   Objective: Share information on current state of emergency department services
   Time: 15 mins (65 mins)

Break – 10 mins (75 mins)

5. **Review of Terms of Reference**
   Lead: Kristy Anderson
   Objective: Review the Task Group's TOR, identify gaps and discuss any outstanding questions. Members will also have the opportunity to provide feedback by email following the meeting.
   Time: 15 mins (90 mins)

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6. **Approach to September 29 Full Day Meeting**
   Lead: Kristy Anderson
   Objective: To engage the Task Group in planning for the full day meeting, confirm goals, and ensure members are well prepared to share information about and identify effective strategies
   Time: 30 mins (120 mins)
   a. Review Proposed Agenda
      - Goal 1: Information sharing to develop common understanding of shared challenges
      - Goal 2: Identification of strategies to improve ED and hospital capacity for implementation across health authorities in Fall/Winter

Approach to Sept 29
all-day working sessic

b. Actions required for next meeting
    i. Members to review ESAC reports and be prepared to share strategies of most relevance that can be implemented in Fall / Winter
        1. ESAC - Crowding in BC Emergency Departments

ESAC Crowding
Report in BC EDs_Fina

        2. ESAC - COVID-19 Rapid Learning Review

ESAC Rapid Learning
Review Report - Final.

    ii. Each health authority to prepare a presentation on current state, challenges, strategies in use, and potential strategies for further implementation
    iii. Identification of Task Group members to lead discussion of key focus areas

7. Wrap up

For Discussion: Proposed Approach for Full Day Session

Members invited to review Emergency Services Advisory Committee (ESAC) Reports - see next slide

-Morning - 9 am to noon

Goal: Information sharing to develop common understanding of shared challenges

1. Welcome

2. Review of Expected Demand for Fall/Winter
    - Review Fall/Winter demand modelling with focus on impacts on emergency departments and hospital access and flow
    - Identification of focus patient populations

3. Health Human Resources
    - Current context, strategies planned and underway
    - Focus on workplace violence

4. Strategies to support Alternate Level of Care (ALC) patients in community

5. Interior Health – Learnings from the Kamloops Health Service Action Plan
    - Royal Inland Hospital
    - Clearwater Emergency Department

Afternoon – 1 pm to 4 pm

Goal: Identification of strategies to improve emergency department and hospital capacity for implementation across health authorities in Fall/Winter

6. Health Authority Roundtable & Strategy Identification
    - Each health authority to present on current challenges, strategies in use, and potential strategies for implementation, including linkages to ESAC recommendations
    - Development of an inventory of key strategies, including prioritization of strategies for near-term implementation

7. Exploration of Additional Areas and Patient Populations that may Require Additional Focus
    - Strategies to support cultural safety and humility
    - Rural emergency department supports and patient transport
    - Pediatric care
    - Mental health
    - Other topics that emerge during the day

8. Work planning for October 6 meeting

Foundational Documents

ESAC Reports:

1. *Crowding in BC Emergency Departments: Recommendations and Action Plan*
   - 9 recommendations
2. *COVID-19 Rapid Learning Review*
   - 11 recommendations

In advance of the Sept 29 meeting, members are asked to review the ESAC reports and consider:

- Which recommendations are most relevant?
- Are they the right solutions for the challenges at hand? What is missing?
- What is the implementation status in each health authority? If they are not currently implemented, could they be implemented or expanded on in Fall/Winter 2022/23?

Question for consideration: Are there other reports or resources that Task Group members should review in advance of the September 29 meeting?

s.13

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Withheld pursuant to/removed as

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Emergency Department and Hospital Capacity (EDHC) Task Group

AGENDA

September 22, 2022 (1100-1300)

Virtual Meeting

	MoH - Stephen Brown, Deputy Minister of Heath		VIHA - Marko Peljhan, additional representative TBC		PHC – Cindy Elliott
	MoH - Kristy Anderson, ADM, Hospital & Provincial Health Services		FHA - Laurie Leith, Dermot Kelly, Dr. Craig Murray		DoBC– Dr. Sam Bugis, Vice President, Physician Affairs & Specialist Practice
	MoH - Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation		NHA - Penny Anguish, Ciro Panessa, Angela De Smit		DoBC Section of Emergency Medicine - Dr. Steven Fedder (regrets), Dr. Quynh Doan, Dr. Gord McInnes
	MoH - Leah Smith, A/ED Hospital Services Branch		IHA - Diane Shendruk, Shallen Letwin,		
	MoH - Leann Cairns, Director		VCH - Michelle De Moor, Hussein Kanji, Alternates: Lori Korchinski, Bob Chapman		
	MoH – Leslie Halston, Secretariat		PHSA - Susan Wannamaker, Garth Meckler		**** Membership is still being finalized.**
			BCEHS - Leanne Heppell, Dr. Wilson Wan		

1 - Call to Order		**Lead**	**Attachments**
11:00 - 11:15	Roundtable Introductions	Kristy Anderson	
2 - Welcome and Purpose of the Task Group (20 minute)		**Lead**	**Attachments**
11:15 – 11:35	Provide direction on purpose of the Task Group	Stephen Brown	
3 - Transition from Emergency Services Advisory Committee (ESAC) to ED and Critical Care Health Improvement Networks (HINs)		**Lead**	**Attachments**
11:35 – 11:50	Provide update on the vision for the HINs and linkages to the work of the Task Group	Dr. Maureen O'Donnell	
4 -Doctors of BC		**Lead**	**Attachments**
11:50 – 12:05	Share information on current state of emergency department services	Drs. Gord McInnes and Quynh Doan	
BREAK 10 minutes			
5 -Review of Terms of Reference		**Lead**	**Attachments**
12:15 – 12:30	Review the Task Group's TOR	Kristy Anderson	DRAFT TOR 2022.09.20.docx
6 -Approach to September 29 Full Day Meeting		**Lead**	**Attachments**
12:30 – 12:45	Engage the Task Group in planning for the full day meeting, confirm goals, and ensure members are well prepared to share information about and identify effective strategies	Kristy Anderson, ADM, Hospital & Provincial Health Services	Approach to Sept 29 all-day working sessic ESAC Crowding Report in BC EDs_Fina

			ESAC Rapid Learning Review Report - Final.
7 – Wrap Up		**Lead**	**Attachments**
12:55 - 1:00	Next steps	Kristy Anderson	

Emergency Department and Hospital Capacity Task Group Membership Meeting 11 am - 1 pm, Sept 22

From: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
To: O'Donnell, Maureen HLTH:EX <Maureen.ODonnell@gov.bc.ca>, XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>
Cc: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>, Rasmussen, Kristin [PHSA] <kristin.rasmussen@phsa.ca>, Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>, Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>
Sent: September 21, 2022 10:38:45 AM PDT
Attachments: Agenda Emergency Department and Hospital Capacity Task Group.docx

Hello Maureen,

I just wanted to follow-up to confirm that you are available to participate in the Task Group meeting tomorrow (agenda attached with meeting materials embedded for Thursday, Sept 22)? We have you slated to present at 11:35-11:50 am on the ED and critical care HINs. This presentation will be immediately following the DM who will share his vision on the scope of the Task Group's work. Appreciate you are juggling multiple meetings and travel, so please let us know if you are able to participate at that time, or if another time works better.

Also, I know you have an existing PPT re: the HIN, but please let us know if we can support you in updating the PPT or preparing in any way.s.13

s.13

Please don't hesitate to connect if we can be of assistance.

Kind regards, Leah

Leah M Smith *(she / her / hers)*
A/Executive Director, Hospital Services Branch
Hospital and Provincial Health Services Division, Ministry of Health

Office: 778 698 1340
Mobile: 778 678 3207
Email: leah.smith@gov.bc.ca

From: Smith, Leah M HLTH:EX
Sent: September 19, 2022 8:20 PM
To: O'Donnell, Maureen HLTH:EX <Maureen.ODonnell@gov.bc.ca>; Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>
Cc: XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>; Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>; Rasmussen, Kristin [PHSA] <kristin.rasmussen@phsa.ca>
Subject: RE: For Action: Emergency Department and Hospital Capacity Task Group Membership; Due Sept 21 @ 9 am

Hi Maureen,

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In terms of order of agenda items, we'd envision:

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   Break
5. Terms of Reference
6. Review of Key ESAC Reports
7. Confirm Approach to Full Day Meeting

We'll be working to finalize the agenda tomorrow, but wanted to check in to confirm that this timing / approach could work for you. Also, if you are able to share present on the HINs, please let me know if there is anyone else that you would like to join you.

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Sent: September 19, 2022 2:48 PM
To: Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>
Cc: XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>; Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>; Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>; Rasmussen, Kristin [PHSA] <kristin.rasmussen@phsa.ca>
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Cc: XT:ODonnell, Maureen HLTH:IN; Smith, Leah M HLTH:EX; Cairns, Leann HLTH:EX
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Maureen – I am so sorry I missed you on this – I really need a distribution list.

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Cheers,

Kristy Anderson

ADM, Hospital and Provincial Health Services

Ministry of Health

(250) 952-3387 (desk)

(250) 920-6324 (mobile)

Kristy.Anderson@gov.bc.ca

From: Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>
Sent: September 16, 2022 5:05 PM
To: XT:Anguish, Penny HLTH:IN <penny.anguish@northernhealth.ca>; Heppell, Leanne EHS:EX <Leanne.Heppell@bcehs.ca>; Peljhan, Marko <Marko.Peljhan@islandhealth.ca>; XT:DeMoor, Michelle EHS:IN <Michelle.DeMoor@vch.ca>; XT:Leith, Laurie HLTH:IN <laurie.leith@fraserhealth.ca>; XT:Kelly, Dermot FRHA:IN <Dermot.Kelly@fraserhealth.ca>; Wannamaker, Susan [PHSA] <susan.wannamaker@phsa.ca>; Diane Shendruk IHA <Diane.Shendruk@interiorhealth.ca>; Letwin, Shallen <Shallen.Letwin@interiorhealth.ca>; npeters5@providencehealth.bc.ca
Cc: XT:Panessa, Ciro HLTH:IN <ciro.panessa@northernhealth.ca>; 'De Smit, Angela [NH]' <Angela.DeSmit@northernhealth.ca>; Korchinski, Lori [VCH] <Lori.Korchinski@vch.ca>; XT:Chapman, Bob HLTH:IN <bob.chapman@vch.ca>; Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>; Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>
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1. September 22, 10 am to 1 pm – virtual meeting
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5. Additional meetings to be confirmed based on workplan

Please reply to me, with a copy to leah.smith@gov.bc.ca and Leann.Cairns@gov.bc.ca, advising of your additional health authority representative by Wednesday, September 21 at 9 am. An agenda and additional details to follow.

Thanks in advance and please feel free to reach out with any questions as well.

Kristy Anderson

ADM, Hospital and Provincial Health Services

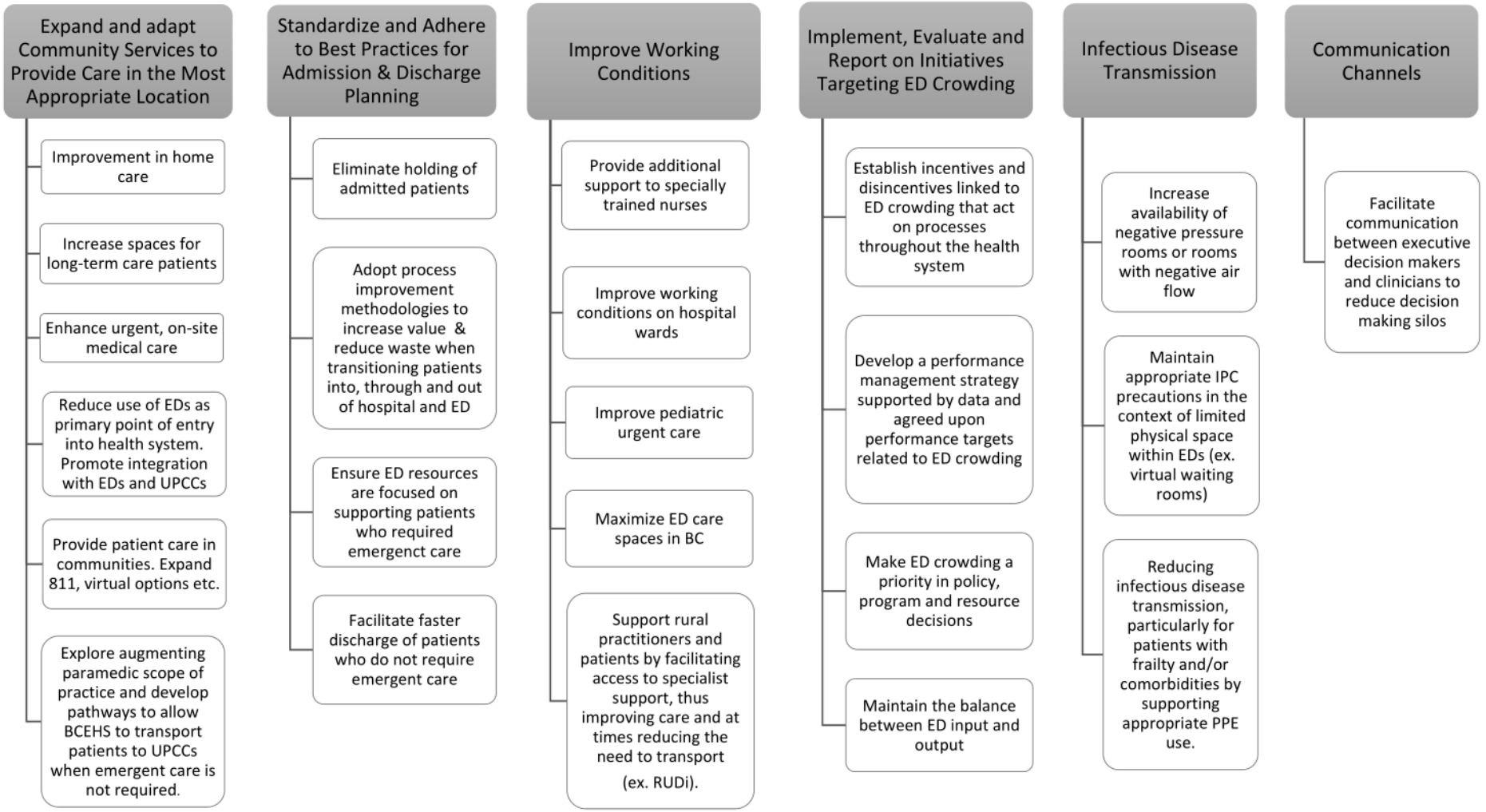
Ministry of Health

(250) 952-3387 (desk)

s.17 (mobile)

Kristy.Anderson@gov.bc.ca

The following themes have been captured from three sets of recommendations:
ED Crowding Report (ESAC, 2018), Rapid Learning Review (ESAC, 2020) and recommendations from Doctors of BC (2022)



ED and Hospital Capacity Task Group – *Draft Themes for Discussion*

Re: Emergency Department and Hospital Capacity Task Group Membership Meeting 11 am - 1 pm, Sept 22

From: O'Donnell, Maureen HLTH:EX <Maureen.ODonnell@gov.bc.ca>
To: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>, XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>
Cc: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>, Rasmussen, Kristin [PHSA] <kristin.rasmussen@phsa.ca>, Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>, Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>
Sent: September 22, 2022 10:31:25 AM PDT
Attachments: 22 09 22 Provincial HIN supports.pptx

Hi Leah and all

I am attaching my slides for this this am.

I have been having trouble with zoom firewalls this am to the point where I had to dial into the PHSA board committee meeting I just came off of. I am HOPING teams works

None the less, Leah and team can ou please be prepared to "drive" /display the slides for me as i am worried tech will fail. I will just say next slide or give the slide number (I made sure there was one on each slide) as an indication to move on.

Thanks.

m

From: Smith, Leah M HLTH:EX
Sent: September 21, 2022 4:40 PM
To: O'Donnell, Maureen HLTH:EX; XT:ODonnell, Maureen HLTH:IN
Cc: Cairns, Leann HLTH:EX; 'Rasmussen, Kristin [PHSA]'; Halston, Leslie HLTH:EX; Anderson, Kristy HLTH:EX
Subject: RE: Emergency Department and Hospital Capacity Task Group Membership Meeting 11 am - 1 pm, Sept 22

Great to have you confirmed

I think that there will be quite a few people at the meeting that won't have seen your earlier presentation (we are still working with the HAs to confirm members, but more than half of the group aren't part of the VP operations / standing committee).

s.13

Kind regards, Leah

From: O'Donnell, Maureen HLTH:EX <Maureen.ODonnell@gov.bc.ca>
Sent: September 21, 2022 3:18 PM
To: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>; XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>
Cc: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>; 'Rasmussen, Kristin [PHSA]' <kristin.rasmussen@phsa.ca>; Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>; Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>
Subject: Re: Emergency Department and Hospital Capacity Task Group Membership Meeting 11 am - 1 pm, Sept 22

hey ladies,

I properly read this email now

I will be there.

Given that all the VP's will already have heard about HIN's, what do yout hink about me just speaking to them since they come after this work and not doing the ppt? Can be happy to followup with those who might have questions, but i think we want this group to be task focussed? s.13
s.13

If you want to PPT I will revised slightly for this audience and do it - no problem. Just thinking about the purpose of this part of the disussion and the audience...

m

From: Smith, Leah M HLTH:EX
Sent: September 21, 2022 10:38 AM
To: O'Donnell, Maureen HLTH:EX; XT:ODonnell, Maureen HLTH:IN
Cc: Cairns, Leann HLTH:EX; 'Rasmussen, Kristin [PHSA]'; Halston, Leslie HLTH:EX; Anderson, Kristy HLTH:EX
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Cc: XT:Panessa, Ciro HLTH:IN <ciro.panessa@northernhealth.ca>; 'De Smit, Angela [NH]' <Angela.DeSmit@northernhealth.ca>; Korchinski, Lori [VCH] <Lori.Korchinski@vch.ca>; XT:Chapman, Bob HLTH:IN <bob.chapman@vch.ca>; Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>; Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>
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s.17 (mobile)
Kristy.Anderson@gov.bc.ca

Page 0426 of 1067 to/à Page 0440 of 1067

Withheld pursuant to/removed as

s.13

FW: Attachment

From: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
To: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>, Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>, Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>, Skeels, Carley HLTH:EX <Carley.Skeels@gov.bc.ca>
Sent: September 23, 2022 12:33:21 PM PDT
Attachments: cjem_2013_overcrowding_and_access_block.pdf, emergency_dept_overcrowding_-_july_2011.pdf

A couple of documents that came up in our call yesterday. The DoBC co-presidents suggested that the 2013 report could be shared as part of the pre-reading package.

From: Gord McInnes s.22
Sent: September 22, 2022 12:37 PM
To: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
Cc: Steven Fedder s.22 Quynh Doan <qdoan@bcchr.ca>
Subject: Attachment

Here is the CAEP position paper I mentioned regarding Emergency Department overcrowding and Access Block.
Thanks

Gord McInnes

Emergency department overcrowding and access block

Andrew Affleck, MD*; Paul Parks, MD†; Alan Drummond, MD‡; Brian H. Rowe, MD, MSc§; Howard J. Ovens, MD‖

Correspondence to: Dr. Howard Ovens, Schwartz/Reisman Emergency Centre, Mount Sinai Hospital, Toronto, ON M5G 1X5; howard.ovens@utoronto.ca.

CJEM ;15(6):359-370 DOI 10.2310/8000.CAEPPS

Page 0443 of 1067 to/à Page 0452 of 1067

Withheld pursuant to/removed as

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Emergency Department and Hospital Capacity Task Group

From:	Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
To:	XT:Anguish, Penny HLTH:IN <penny.anguish@northernhealth.ca>, Heppell, Leanne EHS:EX <Leanne.Heppell@bcehs.ca>, marko.peljhan@islandhealth.ca, XT:DeMoor, Michelle EHS:IN <Michelle.DeMoor@vch.ca>, XT:Leith, Laurie HLTH:IN <laurie.leith@fraserhealth.ca>, XT:Kelly, Dermot FRHA:IN <Dermot.Kelly@fraserhealth.ca>, susan.wannamaker@phsa.ca, Shendruk, Diane <Diane.Shendruk@interiorhealth.ca>, Letwin, Shallen <Shallen.Letwin@interiorhealth.ca>, npeters5@providencehealth.bc.ca, Garth.Meckler@cw.bc.ca, Steven Fedder s.22 Quynh Doan <qdoan@bcchr.ca>, Gord McInnes s.22 Sam Bugis <sbugis@doctorsofbc.ca>, Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>, O'Donnell, Maureen HLTH:EX <Maureen.ODonnell@gov.bc.ca>, XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>, Craig.Murray@fraserhealth.ca, XT:HLTH Neill, Debbie <dneill@providencehealth.bc.ca>, celliott@providencehealth.bc.ca, XT:Jakob, Theo EHS:IN <tjakob@providencehealth.bc.ca>, s.22 hussein.kanji@vch.ca, Harding, Richard <Richard.Harding@interiorhealth.ca>, Aron.Zuidhof@interiorhealth.ca, XT:HLTH Grafstein <egrafstein@providencehealth.bc.ca>, Patrick.Rowe@northernhealth.ca, Djurdjev, Ognjenka [PHSA] <ODjurdjev@phsa.ca>, Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>, XT:HLTH Bell, Sarah <sjbell@cw.bc.ca>, tracey.stephenson@islandhealth.ca, Wan, Wilson EHS:EX <Wilson.Wan@bcehs.ca>
Cc:	Mumblo, Melissa HLTH:EX <Melissa.Mumblo@gov.bc.ca>, Tanya Miller <tmiller@doctorsofbc.ca>, De Smit, Angela [NH] <Angela.DeSmit@northernhealth.ca>, Lori.Korchinski@vch.ca, Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>, Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>, Skeels, Carley HLTH:EX <Carley.Skeels@gov.bc.ca>, Korchinski, John HLTH:EX <John.Korchinski@gov.bc.ca>, Rasmussen, Kristin [PHSA] <kristin.rasmussen@phsa.ca>, Leverman, Charly HLTH:EX <Charly.Leverman@gov.bc.ca>, Hatcher, Meghan <Meghan.Hatcher@interiorhealth.ca>, Johnston, Sandra (Sandie) [NH] <Sandra.Johnston@northernhealth.ca>
Sent:	September 23, 2022 7:34:16 PM PDT
Attachments:	ESAC Crowding Report in BC EDs_Final.pdf, CAEP Position Statement ED overcrowding and access block.pdf, 22 09 22 Health Improvement Networks.pdf, ESAC Rapid Learning Review Report - Final.pdf

Hello Task Group Members,

Thank you for your participation in our first meeting on Thursday, and welcome to those who will be joining us for the first time at our all-day meeting in Vancouver on Thursday, September 29, from 9 am to 4 pm. We have now confirmed a venue and will be meeting at:

s.15

Please advise Melissa Mumble, Program Assistant, whether you will be attending in person or virtually by end of day, Monday, September 26. If you are attending in person, please also let Melissa know whether you have any food allergies or dietary restrictions via email at: Melissa.Mumblo@gov.bc.ca

As discussed on Thursday, we are distributing two Emergency Services Advisory Committee reports in preparation for the meeting. Also attached is a position statement from the Canadian Association of Emergency Physicians which was noted by Doctors of BC at our last meeting. Lastly the presentation provided by Dr. Maureen O'Donnell on Health Improvement Networks (HINs) is also attached. An agenda and additional materials to follow early next week.

I look forward to seeing you next week and moving forward with this important work.

Attachments

1. Rapid Learning Review, ESAC (2020) – *previously distributed*
2. Crowding in BC Emergency Departments, ESAC (2018) - *previously distributed*
3. Emergency Department Overcrowding and Access Block, CAEP (2013)
4. Health Improvement Network Presentation

Kind regards, Leah

Leah M Smith *(she / her / hers)*
A/Executive Director, Hospital Services Branch
Hospital and Provincial Health Services Division, Ministry of Health

Office: 778 698 1340
Mobile: 778 678 3207
Email: leah.smith@gov.bc.ca

Emergency Department & Hospital Capacity Task Group

September 22, 2022

RECORD of ACTIONS and/or DECISIONS

Attendees:

Ministry of Health

Kristy Anderson (Chair), ADM, Hospital & Provincial Health Services
Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation
Leah Smith, A/Executive Director, Hospital Services Branch
Leann Cairns, Director, Hospital Services Branch
Leslie Halston, Program Analyst, Secretariat

Doctors of BC

Dr. Quynh Doan, Co-President, Section of Emergency Medicine
Dr. Gord McInnes, Co-President, Section of Emergency Medicine
Dr. Steve Fedder, Co-President, Section of Emergency Medicine (~11:50am)
Dr. Sam Bugis, VP Physician Affairs & Specialist Practice

Health Authorities

VIHA: Marko Peljhan, VP Pandemic Planning, Interim VP Clinical Operations South Island, Cowichan Valley
VIHA: Dr. Tracey Stephenson, Medical Director, Acute Flow & Utilization

FHA: Dermot Kelly, VP Community Hospitals and Health Services
FHA: Dr. Craig Murray, ED physician, Surrey Memorial Hospital

NHA: Penny Anguish, COO, Northern Interior Health Service Delivery Area
NHA: Angela De Smit, COO Northeast Health Service Delivery Area

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VCH: Michelle de Moor, VP Vancouver Acute Services
VCH: Dr. Eric Grafstein, Regional Department Head Emergency VCH-PHC
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VCH: Dr. Hussein Kanji, Provincial Lead & Chair, Critical Care Medicine BCPSQC & CCSEC, Senior Medical Director, Health Emergency Management BC (HEMBC)

PHC: Cindy Elliott, Program Director, Emergency and Access Services
PHC: Norm Peters, Chief Operating Officer

PHSA: Susan Wannamaker, VP Clinical Service Delivery
PHSA: Sarah Bell, Chief Operating Officer, BC Children's Hospital

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Presenter/Guest

Stephen Brown, Deputy Minister of Health
Ross Hayward, ADM Seniors Services Division, Ministry of Health
Kiersten Fisher, Executive Director, Seniors Services Branch
Danielle Prpich, Executive Director, Community Care Supports
Dr. Jim Christenson, ED Physician St Paul's Hospital

Regrets:

Laurie Leith, VP Regional Hospitals and Health Services, Fraser Health Authority
Dr. Patrick Rowe, Medical Lead Northern Health Emergency Room and Trauma Services, NHA
Diane Shendruk, VP Clinical Operations, Interior Health North
Dr. Garth Meckler, PHSA, Associate Professor Pediatrics and Emergency Medicine, University of British Columbia
Division Head, Pediatric Emergency Medicine BC Children's Hospital

Emergency Department & Hospital Capacity Task Group

September 22, 2022

1. Call to Order: Kristy Anderson, Chair, called the Task Group to order at 11:05am and initiated roundtable introductions.

2. Deputy Minister Stephen Brown provided opening remarks and purpose of the Task Group.
Action/Decision: N/A

3. Presentation: Dr. Maureen O'Donnell provided an overview on the vision for the Emergency Care BC and Critical Care BC Health Improvement Networks and linkages to the work of the Task Group.
Action/Decision: N/A

4. Doctors of B.C.
Drs. Gord Mclnnes, Quynh Doan, and Steve Fedder provided overviews of the current state of BC emergency departments.
Action/Decision: N/A

5. Review Terms of Reference
Action/Decision:

- Terms of reference were reviewed, and Task Group members were invited to provide any suggested changes to Leah Smith in advance of the September 29th meeting.

6. Approach to September 29th, Full-day meeting.
The Chair provided an overview for the planning session and the expectations for the day.
Action/Decision:

- Members asked to review recommendations of the – *ED Crowding Report (ESAC, 2018),* and *Rapid Learning Review (ESAC, 2020)* for discussion on September 29.
  - Identify what recommendations are still relevant, which have been implemented and/or have potential for implementation in Fall/Winter 2022/23.

7. Wrap-up
Action/Decision

- Members to advise if alternates will attend future meetings.
- The Ministry to provide secretariat support including record of actions or decisions.
- The Ministry to provide an overview of Fall/Winter surge strategies for reference.

Emergency Department and Hospital Capacity Task Group

September 29, 2022, Full-Day Meeting
Supplemental Meeting Material

Summary of Approach to Fall/Winter 2022/23 Acute Care Planning

Approach

Health Authorities (HAs) are continuously adapting to system pressures in order to meet the needs of their patient populations. The demand for acute care has continued to change through the course of the COVID-19 pandemic, requiring HAs to routinely update acute care surge plans to ensure readiness to respond to actual and possible patient needs.

Some strategies in the 2021/22 plans, such as out-of-health authority patient transfers, have been relied upon during past periods of high demand. HAs have planned for a range of demand scenarios including some extremely high demand scenarios which are unlikely to occur. In early September, HAs initiated a refresh of their acute care surge plans. The plans were developed based on several assumptions, which included but are not limited to:

- The ongoing circulation of COVID-19 and expected resurgence of other respiratory illnesses are predicted to result in periods of high demand for acute care services leading to health system capacity challenges into the Fall and Winter due to patients seeking care as well as increased staff illness.
- Initial modeling predicts mental health admissions, pediatric admissions and high demand for alternative level of care beds will also impact hospital capacity.
- Surge plans include all inpatient beds: critical care (ICU, HAU, medical/surgical, sub-acute and mental health).

To enable accurate planning, HAs began the planning process by confirming the number of physical beds that are functional (# of beds that are staffed as of August 2022) and documented the strategies in use to achieve that capacity, as well as possible future strategies that could be employed to care for additional patients.

Strategies commonly referred to as 'R' strategies were grouped into one of seven categories in the plans. Some overlap was noted between the strategies.

Reduce Length of Stay	Redesign Services	Reductions in Services	Redirection to Other Services	Redistribute Demand	Redeployment of Clinical Staff/ Other HR strategies	Retraining and Deploying of Additional Staff

Examples of Strategies

Reduce Length of Stay	• Discharge all non-acute patients with increased community support • Increased ALC review, and adjustment of LTC policy to favor acceptance of ALC patients over patients from community • Physician supported rapid discharge • Increased virtual support in community to support early discharge
Service Redesign Creating Capacity	• Distribute ICU patients between tertiary sites • Cohorting of patients
Service Reduction (Limiting Access to Services)	• Slowdown of some ambulatory programs • Postponement of non-urgent scheduled surgeries • Phased OR shutdowns
Redirection to other Services (Alternative Locations/Providers)	• Redirect non-LLTO to regional sites (diversion) • Increased home support services and community occupancy • Implement outpatient rehab program with community clinics to expedite rehab discharges and redeploy ambulatory staff
Redistribute Demand (Moving Patients)	• Level loading amongst sites (HSDA and RHA) • Regional / provincial CC triage model to distribute ICU demand between facilities • Request support from other RHAs
Redeployment (Moving Staff)	• Implement business continuity plan • Actively recruit voluntary redeployment of appropriate staff to CC and Emergency Department • Voluntary leave cancellation • Redeploy clinically trained staff to areas/sites with greatest need

Emergency Department and Hospital Capacity Task Group

AGENDA

September 29, 2022, 9 am – 4 pm

Location: s.15
s.15

Join Zoom Meeting: s.15; s.17 Meeting ID: s.15; s.17 Passcode: s.15; s.17

Mandate: *The Emergency Department and Hospital Capacity Task Group (the Task Group) will develop a provincially coordinated approach and identify solutions to address capacity challenges facing emergency departments and hospitals. The work of the Task Group will include rapid identification, development and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.*

Morning Goal: Information sharing to develop common understanding of current state, potential demand and evidence informed opportunities for change			
1 – Welcome		**Lead**	**Attachments**
9:00 – 9:30 am	Introductions Territorial acknowledgement and reflection on National Day of Truth and Reconciliation Review of agenda and meeting package	**Kristy Anderson,** ADM, Hospital and Provincial Health Services	DRAFT Emerg and Hospital Capacity Tasl
2 – Presentation on Fall / Winter Modeling for Emergency Departments and Hospital Capacity		**Lead**	**Attachments**
9:30 – 10:45 am	Review Fall/Winter emergency department and hospital capacity demand modelling and key indicators to support identification of impactful strategies to increase ED and hospital capacity	**Ognjenka Djurdjev**, Executive Director, Provincial Clinical Policy Analytics and Registry Initiatives Data Analytics, Reporting and Evaluation, PHSA	
10:45 – 11:00 am	****** Break ******		
3 – Strategies to care for Alternate Level of Care (ALC) patients in community & Long-Term Care settings		**Lead**	**Attachments**
11:00 – 11:30 am	Overview of strategies to reduce the number of ALC patients in hospital that can be appropriately cared for in another setting, and strategies to increase community supports to avoid ED visits / hospital admissions	**Ross Hayward**, ADM, Seniors Services Division **Kiersten Fisher**, Executive Director, Seniors Services Branch **Danielle Prpich**, Executive Director, Community Care Supports	
4 – Learning from the Kamloops Health Service Action Plan		**Lead**	**Attachments**
11:30 am – noon	Case study overview to explore strategies and lessons learned in two Interior Health facilities: a. Royal Inland Hospital b. Clearwater Emergency Department	**Diane Shendruk**, Vice President, Clinical Operations - North **Dr. Douglas Smith**, Executive Medical Director	
Noon – 12:30 pm	******Lunch******		

Afternoon Goal: Identification and prioritization of strategies for further investigation and implementation to improve emergency department and hospital capacity across health authorities			
5 – Health Authority Roundtable and Strategy Identification		**Lead**	**Attachments**
12:30 – 1:30 pm	Each health authority is invited to share a brief overview of strategies in use, and promising strategies.	Health authorities	
6 – Small Group Strategy Identification & Prioritization		**Lead**	**Attachments**
1:30 – 2:00 pm	Break into small in-person and online groups to identify and explore ideas for change. Groups will record all possible strategies identified with a goal of prioritizing 3-5 promising strategies for further exploration. At the end of this exercise, the group should be able to articulate the intended outcome and value of the strategies they have prioritized.	Small groups - Lead identified by each group to record discussion for eventual report out	
7 – Prioritization of Promising Strategies		**Lead**	**Attachments**
2:00 – 2:30 pm	Remaining in small groups, identify and record barriers to implementation of the 3-5 strategies prioritized by the group.	Small groups - Lead identified by each group to record discussion for eventual report out	
2:30 – 2:45 pm	******Break******		
8 – Roundtable Report Out on Promising Strategies		**Lead**	**Attachments**
2:45 – 3:30 pm	Roundtable report out by each group on the top strategies for prioritization in order to create a preliminary inventory of strategies. Recognizing time constraints, the information documented by the small groups will be collated for discussion at a future meeting.	Small groups - Lead identified by each group to report out on promising strategies	Supplemental Mtg Material_2022 FallW
9 – Recap and Next Steps		**Lead**	**Attachments**
3:30 – 4:00 pm	Recap of emerging strategies and/or consensus solutions. Brief exploration of areas and patient populations that may require additional attention. Approach to next meeting.	**Kristy Anderson**, ADM, Hospital and Provincial Health Services	

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Withheld pursuant to/removed as

s.13 ; s.15 ; s.17

Emergency Department & Hospital Capacity Task Group

September 22, 2022

RECORD of ACTIONS and/or DECISIONS

Attendees:

Ministry of Health

Kristy Anderson (Chair), ADM, Hospital & Provincial Health Services
Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation
Leah Smith, A/Executive Director, Hospital Services Branch
Leann Cairns, Director, Hospital Services Branch
Leslie Halston, Program Analyst, Secretariat

Doctors of BC

Dr. Quynh Doan, Co-President, Section of Emergency Medicine
Dr. Gord McInnes, Co-President, Section of Emergency Medicine
Dr. Steve Fedder, Co-President, Section of Emergency Medicine (~11:50am)
Dr. Sam Bugis, VP Physician Affairs & Specialist Practice

Health Authorities

VIHA: Marko Peljhan, VP Pandemic Planning, Interim VP Clinical Operations South Island, Cowichan Valley
VIHA: Dr. Tracey Stephenson, Medical Director, Acute Flow & Utilization

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Fall Surge Planning

Increasing Capacity in Home and Community Care

Presentation to ED and Hospital Capacity Task Group
September 29, 2022

BRITISH COLUMBIA | Ministry of Health

CONTEXT

BRITISH COLUMBIA | Ministry of Health

- Approximately 1,300 ALC patients in acute - 500 waiting for LTC placement
- Data requested for ALC waiting for supports at home
- Target to reduce ALC by 40-60% this fall to support surge capacity in acute
- HAs employing strategies to increase capacity in home and community care
  →support timely discharges to community from acute and mitigate risk of re-admission and ED visits

HOME HEALTH STRATEGIES

BRITISH COLUMBIA | Ministry of Health

- Provide casual staff with opportunities for regular part time/full time work.
- Offer enhanced care (i.e., 24/7) for complex clients who can be supported at home.
- Optimize use of home support, adult day programs and respite to support higher needs clients and their caregivers

HOME HEALTH STRATEGIES

BRITISH COLUMBIA | Ministry of Health

- Temporarily extend the provision of home support at no cost post-discharge from acute
- Improve timely coordination and discharge planning for clients across health authorities
- Contract with agencies to augment home health staffing.
- Augment access to equipment to support acute discharge, as able (e.g. use secondary vendor, if needed)

Rapid Response for Transitional Care

BRITISH COLUMBIA | Ministry of Health

- Implement rapid response teams/service in the community, aligned with the Personal Support Stabilization Program (PSS+) in VCH
- Focus on transitional care for complex medically frail with following hospital admission or emergency visit who are at risk of re-admission
- Provide enhanced supports, stabilization and reablement after discharge from acute

VCH Model – PSS+

Aim Statement: Clients who are at risk for potential adverse health effects as a result of the transition from acute care hospital to home will receive acute to community transitional care within 24 hours of discharge from hospital.

Anticipated Outcomes:

- Improve the transitional care experience for client
- Reduction in acute care service utilizations
- Increased coordination and communication between the client's healthcare team
- Improved health outcomes (improved function and independence)
- Increased client and family satisfaction and quality of life
- Reduction in intensity of longitudinal care services

VCH Model – PSS+

BRITISH COLUMBIA | Ministry of Health

PSS+ Program Attributes

1. Serves the complex medically frail population, including those with COVID-19, facing time-sensitive care needs following hospital admission or Emergency Department visit
2. Rapid community response that supports transitions from hospital to home
3. Access to short-term comprehensive, coordinated and client-centred care
4. Provides personalized support to improve function and independence and/or restore baseline.
5. Prevention of avoidable hospital re-admissions
6. Single point of access into the program
7. Provides interdisciplinary team-based care

Strategies to increase LTC capacity

BRITISH COLUMBIA | Ministry of Health

- Target admissions to prioritize acute care, balanced with community emergency placement needs. (80% acute – 20% community)

- Purchase additional private pay capacity in contracted operator sites where staffing challenges will not impact utilization of spaces.

Strategies to increase LTC capacity

BRITISH COLUMBIA | Ministry of Health

- Implement a provincial strategy providing incentives to seniors placed outside their preferred geographic region (ALC and community clients)

- Target resources to contract management in LTC for operators with closed beds

Strategies to increase LTC capacity

BRITISH COLUMBIA | Ministry of Health

- Purchase AL capacity and develop a staffed "cluster" model of AL suites for ALC patients who with a 30 – 60 day stay may be able to return to community or be admitted to AL.

- HAs to develop float pools to open closed LTC capacity and maintain current capacity, supporting owned/operated and contracted providers.

Strategies to increase LTC capacity

BRITISH COLUMBIA | Ministry of Health

- Develop innovative strategies to provide RN clinical support to LTC, including RN on-call options, mobile team options, and partnering with acute and HH.
- Explore technology support for RN on-call including iPAD/skype/zoom etc

Strategies to increase LTC capacity

BRITISH COLUMBIA | Ministry of Health

- Work with contracted operators to explore alternate shift schedules (e.g., 12-hour shifts) to make nursing shifts (RN and LPN) more attractive.

Note: some of these strategies may become long-term or permanent strategies, based on their success in achieving goals.

Kamloops Health Service Action Plan

Diane Shendruk, Vice President, Clinical Operations North
Douglas Smith, MSc, MD, CCFP, Executive Medical Director, Clinical Operations North

September 29, 2022

Emergency Department and Hospital Capacity Task Group

Land Acknowledgement

We recognize and acknowledge that we are collectively gathered on the traditional, ancestral and unceded territories of xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish) and səlilwətaɬ (Tsleil-Waututh) Nations. It is with humility that we continue to strengthen our relationships with First Nation, Métis and Inuit peoples across British Columbia.

Kamloops – Tertiary Acute and Community

Shuswap word Tk’emlúps, which means “where the rivers meet”

Kamloops Local Health Area & Royal Inland Hospital (RIH)

Local and IH Challenges

- COVID-19 Pandemic (2020 onwards)
- Flood and Fires (2021)
- Advancing Care Electronically (MEDITECH) implementation (June 2021)
- Phil and Jennie Gaglardi Tower (July 2022)
- Expansion of Emergency Department (Sept 2022)
- Staffing pressures

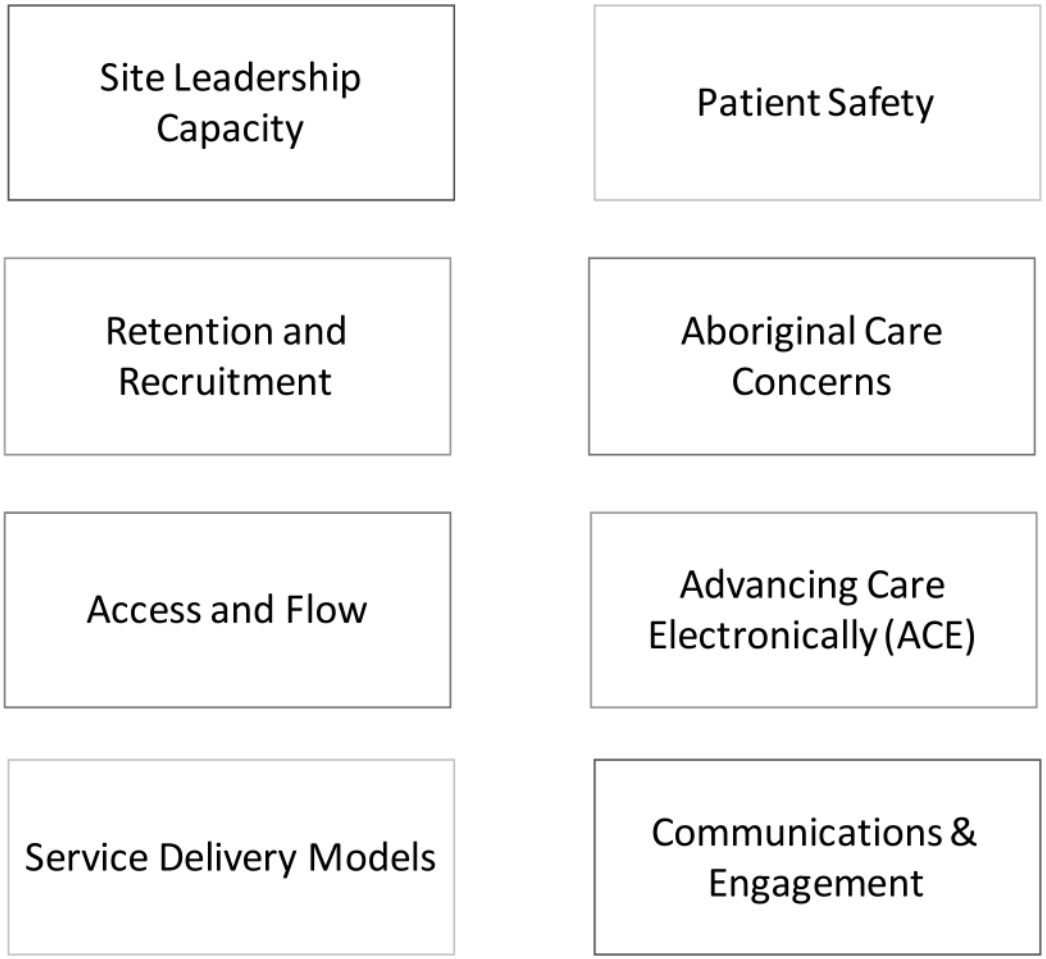
Kamloops Health Service Action Plan

s.13

- Important components of the success were achieved by:
  - Using a system wide approach
  - Broad stakeholder engagement, including medical & clinical leadership

Supporting Governance

- Distributive model of accountability, responsibility and communication
- Establishment of a weekly cascading meeting structure
  - Identification of cross linked work activities
  - Timely monitoring and support
- Significant Medical Staff integration
  - Weekly Medical Leadership meeting


Site Leadership Capacity
Patient Safety
Retention and Recruitment
Aboriginal Care Concerns
Access and Flow
Advancing Care Electronically (ACE)
Service Delivery Models
Communications & Engagement

Strategies to Improve ED and Hospital Access and Flow

Emergency Department Tactics

- Examined flow of patients through the ED and made adjustments to the use of space and staff (fast track)
  - Immediate improvement in flow
    - 113 minutes down to 66 minutes in time to physician initial assessment
- Additional medical staff resources
  - Implementation of ED Physician Access and Flow Lead
  - RIH Hospitalist Access and Flow Lead
  - Embedding a physician lead into the Quick Response Team
- Considered ED Physician at Triage
- Expansion of the Quick Response Team to include a Rural Transition Liaison role

Hospital Access and Flow

- Transition to virtual bed meeting structure
  - Support all IH West team participation
- Integration of Acute and Alternate Level of Care patient report into morning bed meeting
- Review and update to the RIH Site Capacity Plan and Bed Utilization Plan
- Implementation for Discharge Planning Escalation Algorithm regionally
- MEDITECH optimization
  - Including enhancements to digital patient trackers

Additional Activities

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- Piloting Health Career Access Program in acute care setting

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Dr. Helmcken Hospital Rural Staffing Model

- On-going nursing staffing challenges leading to service disruptions
- The Professional Practice Office completed an assessment on the minimum staffing levels
    - For a site with fewer than 5000 visits per year, the recommended minimum nursing complement was two registered nurses – 1 ED trained registered nurse and 1 non-ED trained nurse

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- Staffing model evaluation is underway

Phase 2 & 3 of the Action Plan

- Examining the integration of an ED Surge Plan, including accountabilities
- Flexible and adaptable care models being developed and implemented in one medical and one surgical unit at RIH
- Estimated Date of Discharge – MEDITECH process refinements
- Service Delivery Model Planning
  - Thompson Primary Care Network planning and UPCC model optimization
  - Medical Staff position recruitment

Discussion & Questions

Emergency Department & Hospital Capacity Task Group

September 29, 2022

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Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation
Leah Smith, A/Executive Director, Hospital Services Branch
Leann Cairns, Director, Hospital Services Branch
Donna Wilkinson, Manager, Acute Care Policy and Decision
Leslie Halston, Program Analyst, Secretariat

Doctors of BC

Dr. Quynh Doan, Co-President, Section of Emergency Medicine (11:15am)
Dr. Gord McInnes, Co-President, Section of Emergency Medicine
Dr. Steve Fedder, Co-President, Section of Emergency Medicine
Dr. Sam Bugis, VP Physician Affairs & Specialist Practice

Health Authorities

VIHA: Marko Peljhan, VP Pandemic Planning, Interim VP Clinical Operations South Island, Cowichan Valley
VIHA: Dr. Tracey Stephenson, Medical Director, Acute Flow & Utilization

FHA: Laurie Leith, VP Regional Hospitals and Health Services
FHA: Dr. Craig Murray, ED physician, Surrey Memorial Hospital
FHA: Dr. Sally Barrio, Department Head, Emergency Medicine, Surrey Memorial Hospital (alternate)

NHA: Penny Anguish, COO, Northern Interior Health Service Delivery Area
NHA: Dr. Patrick Rowe, Medical Lead Northern Health Emergency Room and Trauma Services

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BCEHS: Dr. Leanne Heppell, Executive VP BC Emergency Health Services
BCEHS: Dr. Wilson Wan, Interim Chief Medical Officer

FNHA: Gary Housty, A/Executive Director, OCNO
FNHA: Dr. Jeffery Beselt, Community Physician, Kwadacha and Tsay Keh Dene Nations and Emergency Physician, Campbell River

Emergency Department & Hospital Capacity Task Group

September 29, 2022

Guests

Ross Hayward, ADM Seniors Services Division, Ministry of Health
Kiersten Fisher, Executive Director, Seniors Services Branch
Danielle Prpich, Executive Director, Community Care Supports
Heather Cook, Seniors Service Advisor, Seniors Services Branch
Ognjenka Djurdjev, Executive Director, Provincial Clinical Policy Analytics and Registry Initiatives Data Analytics, Reporting and Evaluation, PHSA
Lexi Flatt, Vice President Pandemic Response and Chief Data Officer, PHSA (optional)
Diane Shendruk, VP Clinical Operations, Interior Health North
Dr. Douglas Smith, Executive Medical Director, Interior Health
Meghan Hatcher, Director, Strategic Initiatives, Clinical Operations North, Interior Health Authority

Regrets

FHA: Dermot Kelly, VP Community Hospitals and Health Services
VCH: Michelle de Moor, VP Vancouver Acute Services

1. **Call to Order:**
   - Kristy Anderson, Chair, called the Task Group to order at 9:08 am and initiated roundtable introductions.

2. **Presentation on Fall / Winter Modeling for Emergency Departments and Hospital Capacity**
   - Ognjenka Djurdjev provided a current state snapshot of BC's inpatient units and emergency departments. Key messages included:
     - Overall BC hospital census is trending towards pre-pandemic levels
     - Hospital volumes are expected to increase by a minimum of 3% over 2021/22 volumes with higher growth expected in ALC and Mental Health programs.
     - NH reports the highest proportion of ALC and Other Mental Disorder census compared to the provincial average
     - IH reports a higher proportion of ALC census compared to the provincial average
     - VCH reports a higher proportion of Other Mental Disorder census and a lower proportion of ALC census compared to the provincial average
     - ED volumes are increasing and proportional to population growth
     - Overall wait times are increasing across all acuity levels for both discharged from ED and admitted patients
     - The time waiting for an inpatient bed is increasing and represents the longest portion of ED LOS for admitted patients

   Opportunities to improve patient flow:
     - 1) Potentially avoidable ED visits – data indicates lower acuity visits are increasing with higher rates in IH, NH and VCH
     - 2) Opportunities to Manage Census Growth- ALC patients represent ~14% of the overall BC census
     - 3) New LTC Residents that could be cared for at home - An opportunity may exist to support individuals that may otherwise be admitted to LTC with additional home support

   Key messages:
   - BC inpatient census is expected to increase by at least 3% with growth in ALC and Mental Health to continue to add pressure on the system

- Additional inpatient capacity may be required to manage increases in hospital census related to respiratory like illnesses and increased surgical demand
- Different strategies may be required to improve inpatient capacity by health authority given regional differences (e.g., shortage of LTC beds in NH)
- ED visit volume is increasing and back to pre-pandemic volumes proportional to population growth
- ED length of stay is increasing above pre-pandemic levels for those patients discharged from ED as well as those admitted to the hospital
- Increases in ED length of stay for admitted patients is associated with longer waits to access an inpatient bed
- There are potential upstream and downstream opportunities to mitigate ED volumes and wait times
- Upstream opportunities include the introduction of community and outpatient services that may redirect ED visits to other settings (e.g. specialty clinics) - specifically in the winter months when these volumes increase
- Downstream opportunities include potential management of hospital occupancy by lowering the number of ALC patients
    - More timely access to LTC, rehab and mental health facilities
    - More timely access to investigations and treatment to move patients to appropriate level/tier of care

Action/Decision: N/A

3. Strategies to Care for Alternate Level of Care (ALC) patients in community & Long-Term Care settings

- Ministry of Health's Ross Hayward, ADM, Kiersten Fisher, Executive Director and Danielle Prpich, ED provided an overview of the Ministry's strategies to increase capacity in Home and Community Care. Strategies included:
  s.13

Action/Decision: N/A

4. Learning from the Kamloops Health Service Action Plan

- Diane Shendruk, Vice President, Clinical Operations – North and Dr. Douglas Smith, Executive Medical Director provided an overview of the action plan and components of success. Learnings included:
    - Improvement in flow of patients through ED by making adjustments to the use of space and staff (fast track)

- Additional medical staff resources including implementation of ED Physician Access and Flow Lead, RIH Hospitalist Access and Flow Lead and embedding a physician lead into the Quick Response Team
- Expanded Quick Response Team to include a Rural Transition Liaison role
- Integration of Acute and Alternate Level of Care patient report into morning
- bed meeting
- Piloting Health Career Access Program in acute care setting (providing non-direct care)
- s.13

Phases 2 & 3 will include:

- Examination of the integration of an ED surge plan, flexible care models being developed, MEDITECH process refinements taking place

Action/Decision: N/A

5. Health Authority Roundtable and Strategy Identification

FHA:

- Structure of the 7 R's Plan - Redistribute demand, Redirection of services, Redesign services, Reduce LOS, Redeployment, Retraining, Reduction of Services

NHA:

- Care in the right place, co-leadership model developed, established 2 UPCC's, Hospital @Home program, no to low acuity transportation model, RN transport team, pilot Cerner Flow management model
- Promising options include establishing ED supports for avoidable admissions, Hospital @ Home for medical patients, increase respite for high needs patients.

VCH:

- Promising options include utilizing integrated care team, Medication Infusion Clinic being utilized for administration of IV antibiotics, Patient Support and Stabilization teams have been successful, continuing COVID model of redeployment of ICU and ED staff interchangeably.

PHC:

- Current strategy focus on providing access to detox programs, work on implementing a high acuity unit, adding skilled workers, and increasing student numbers to BCIT, reviewing utilizing Holy Family Hospital for ALC, creation of staffing pool of that can be redistributed as needed,
- St Paul's Clinical Operations care coordination center with BCEHS, nursing redeployment that includes support for travel, surge plans have a low number trigger/initiation point, utilization of patient discharge lounge.

IHA:

- Daily Co-ordination calls to help in managing beds, new model of care focused on non-medical supports to assist with frontline staff, successful recruitment of physicians and nursing staff lower in tourist areas linked to high costs, utilization of ED trained nurses to non-ED trained.
- Urgent Primary Care Centers to help manage unattached patients, same day access to medical imaging,
- Ongoing challenges with staffing rural sites/ED, looking at options for quick response teams and crisis response.
- Initiated weekly meetings to identify issues and work towards resolving.

VIHA:

- STEPS program – using targeted beds and slow stream transitional unit, looking at new ways to support caregivers at home
- Having rapid access to diagnostics would be key component and a focus on Mental Health and Substance Use Day programs and young adult/youth unit for those requiring care for psychiatric illness.
- Implemented clinic to monitor complex vascular patients, awareness that low 'risk tolerance' is a factor
- Implemented Second Look Project-a peer review on admission decisions-which reduced admissions by 10% and established criteria lead discharging.
- Collaborative Emergency Response Team (CERT) which deploys nursing to the patient, Special Populations Team to manage care for homeless individuals.

PHSA:

- Utilizing daily bed management, BCEHS continues work on triage practices, 'treat and release' care and ways to increase staffing resources.
- Implemented 'low-acuity vehicle' for treatable services in downtown areas, proposal to Ministry for additional aircraft to help minimize delays in remote areas.
- Consideration of partnerships with health care centers to allow in house paramedics, over 100 community paramedics to assist with blood draws, etc in small communities
- Province wide hiring campaign ongoing for 1000 new hires, suggestion of communication command center to connect ambulance, hospitals, etc

FHNA:

- Consider strategies to address need for basic diagnostics, labs in small communities.
- Awareness that streamlining care and services potentially leading to return visits.

Action/Decision: N/A

6. Small Group Strategy Identification & Prioritization

Groups were asked to discuss and record all possible strategies identified with a goal of prioritizing 3-5 promising strategies for further exploration:

InPerson

- Which 3-5 key actions of the HA strategies resonated with you?
- Are any of these things you would want to do in your HA? Can you action these?
- What additional data or information would you require?
- What 2-3 things could you put in place on Monday?

Online attendees

- What stood out as things that all HA's should focus on?

7. Roundtable Report Out on Promising Strategies

NHA:
s.13

VCH/Providence

s.13

VIHA

s.13

PHSA

- ***Inaudible***

BCEHS

Online

- Ensure any redesign is patient centered, and barriers (political or financial) are considered
- Consideration that health care operates as a protected essential service
- Sharing of ideas and renewed commitment is promising, ED Capacity issues require us to act by distributing risk
- Initiation of lower ED threshold to activate and initiate response teams
- Real time virtual support is not perfect but holds promise
- System requires support to continue 24/7 diagnostic imaging and CT, et to support decision making
-

8. Bold Ideas Discussion

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9. Recap and Next Steps

Next Meeting October 6, 2022

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Emergency Department and Hospital Capacity Task Group

AGENDA

October 6, 2022, 11 am – 1 pm

Click here to join the meeting

Meeting ID: s.15; s.17

Passcode: s.15; s.17

Mandate: *The Emergency Department and Hospital Capacity Task Group (the Task Group) will develop a provincially coordinated approach and identify solutions to address capacity challenges facing emergency departments and hospitals. The work of the Task Group will include rapid identification, development and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.*

1 – Call to Order		**Lead**	**Attachments**
11:00 – 11:10	• Introductions and agenda review	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division	
2 – Summary of What We Heard - All Day Planning Session		**Lead**	**Attachments**
11:10 – 11:45	• Review information gathered at the September 29th meeting. • Identify gaps in strategies captured; provide additional information for inclusion in the document • Review and categorize short-term (i.e., start now for fall) and longer-term strategies	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division	DRAFT Summary of Themes 2022.10.05 4 TABLE Task Group Themes_Actions 202
3 – Creation of Subgroups		**Lead**	**Attachments**
11:45 – 12:15	• Creation of subgroups to rapidly explore options and make recommendations on next steps	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division	
4 – Health Authority Action Update & Plans		**Lead**	**Attachments**
12:15 – 12:45	• Health authorities to provide an update on actions taken since the last meeting • Health authorities to submit plans to the Ministry of Health outlining strategies to be implemented in the fall • Target due date for plans is Oct 14	Health authorities	
5 – Wrap up		**Lead**	**Attachments**
12:45 – 1:00 pm	• Review of action items and next steps	**Kristy Anderson,** ADM, Hospital and Provincial Health Services	

Introduction

The Emergency Department and Hospital Capacity Task Group (the Task Group) was created to support the rapid development of a provincially-coordinated approach focused on implementation of solutions to address capacity challenges facing emergency departments and hospitals.

The work of the Task Group includes rapid identification, development, and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.

To achieve this the Task Group came together for an all-day meeting on September 29, 2022. The meeting included a presentation on Emergency Department (ED) and hospital data trends and analytics, information on strategies under development to reduce the number of alternative level of care (ALC) patients in hospital, and a case study of strategies implemented in the Kamloops Health Service Area Action Plan. During the afternoon portion of the meeting, participants shared information on promising strategies, practices, challenges and opportunities.

The following is an overview of some of the themes that emerged from discussions at the September 29 meeting. It is expected that these themes and potential actions will continue to be refined over the course of the Task Group's work, and that this document is considered a living document.

Emerging themes, strategies, questions and actions

1. *Further integration of additional care pathways aligned with patient needs, including increased connection to Urgent and Primary Care Centres (UPCCs) and targeted clinics with extended hours*

Many of the patients that present to the ED are often experiencing complex health challenges. Some patients need care that can be provided outside the ED but have experienced access challenges (no primary care provider, unable to access a timely appointment in another setting, limited access to care outside regular working hours, requirement for diagnostics not met in other settings).

For further investigation: What does the data tell us about the characteristics of these patients / groups that could inform how to better care for them? Is there an opportunity to understand the care needs of lower acuity patients with a particular focus on the CTAS 3 patients?

Strategies are needed to improve coordination with UPCCs to increase access to urgent care in the community.s.13

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Gaps in pediatric care were noted, particularly a need to provide additional pediatric clinics with flexible hours. An example of patient preference was highlighted by a survey of pediatric patients who indicated a willingness to leave the ED in favour of going to a scheduled appointment the following day.

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2. Streaming within the ED

ED crowding makes it more difficult to identify and treat patients who need emergency care and may compromise patient and staff safety. Long wait times can negatively impact the patient experience and increase tension in the ED. Strategies are required to reduce patient wait times and to support identification of emergencies and rapidly deteriorating patients.

For further investigation: How could streaming patients within the ED make the emergent and rapidly deteriorating patients more visible, while simultaneously reducing wait times for all patients? What specific patient populations may benefit from targeted services (for example, child and youth, and respiratory illness including CHF, COPD, pneumonia and COVID-19). Island Health noted that they have home health monitoring in place for COPD and CHF, and also treat some of these patients through Hospital at Home.

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3. Site and System Level Bed Management Plans

Site: A common cause of ED crowding is high hospital occupancy, particularly patients admitted through the ED who wait long periods of time for an inpatient bed. When the ED becomes crowded, the ability to respond to the needs of incoming emergency patients and patients already within the ED is reduced and processes become less efficient.

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System: ED and hospital crowding are complex challenges, and system level approaches are needed that ensure sufficient capacity to support flow of patients through the hospital and that ensure capacity is available to care for patients during periods of increased demand.

Action: Strategies are under development by health authorities and the Ministry of Health to reduce the number of ALC patients in hospital across all regional health authorities.s.13

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For further investigation: In addition to ALC patients, what other patient groups could be identified to develop supportive strategies for early discharge? It was noted that there may be patients within the medical / surgical population that could receive care in the community. Additional supports for COPD

and CHF and other ambulatory sensitive condition were noted as potential focus populations. What additional data is needed to better address this challenge?

For further investigation: Wait times for laboratory tests and diagnostic imaging emerged as an increasing challenge. What data is available to better understand this challenge? Could new technology, such as point of care testing, offer a solution? First Nations Health Authority noted increased use of point of care testing to improve patient care and reduce need for transfers.

4. Care coordination and access and flow

Opportunities to improve care coordination in support of access and flow was a central theme. Health authorities identified unique approaches that sparked interest with other health authorities and highlighted opportunities for improved care coordination. For example, use of clinical operations centre at Providence Health Care.

For further investigation: Additional discussion is required to better understand where there can be standardization of processes across similar sites, serving similar populations. For example, what care coordination, access and flow strategies should be in place in large, medium, small, rural sites? What strategies may be needed to best serve specific patient populations and communities? For example, rural patients who may travel for long distances to receive care, including First Nations populations. Interior Health noted use of a supportive discharge tool for Indigenous patients. First Nations Health Authority highlighted the challenges of patients having to travel multiple times for services that could have been provided in one trip. Additional strategies were identified to support rural sites with dedicated leadership (e.g., rural medical director, incentives to work in rural areas, supportive community tables, and a possible preference for APP funding for rural ED physicians).

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5. Decision to admit

It was noted that at times patients may be admitted to hospital for social reasons, or because a clear pathway to access care outside the hospital may not be apparent. It was noted that variation in ED physician admitting practices may result in different admission decisions and risk tolerance. Island Health noted use of a 'Second Look Program' which relied on real time peer review to support physicians to support each other to identify suitable care pathways before admitting a patient to an inpatient unit.

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6. 24/7 model - essential services

EDs are sometimes challenged by limited availability of services on evening and weekends. For example, discharges are more difficult on the weekend due to limited support in the hospital and limited ability to set up community supports. It was also noted that it can sometimes be difficult to access appropriate consults overnight, and there may be opportunities to incentivise in-person overnight consults.

For further investigation: Additional information is required to identify where challenges to accessing care on evenings and weekend exist and to identify impactful strategies that can be used within context of current HHR constraints.

7. Health Human Resources

HHR was consistently identified as an area of critical focus throughout the dialogue. This focused on the importance of retaining those who have continued to work throughout the additional pressures created by the pandemic, as well as the urgent need to recruit new team members.

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8. Additional Actions for consideration / investigation

- Better supports for Indigenous patients – share Interior Health's tool
- Patient Discharge Lounges
- Potential expansion of Real Time Virtual Supports
- Streamlined infection prevention and control processes
- Opportunities to expand community paramedicine; current HR noted as limiting factor

- Opportunities to improve physician or NP supports in LTC, especially overnight, or when considering transfer to the ED
    - Focus on ensuring decisions honouring patient wishes was noted. For example, sometimes LTC staff need additional support / consultation related to transfers at end of life.
- More efficient use of bed resources
    - LTC – decrease time between a bed becoming available and a new resident coming in (Island Health example of reduction of 13 to 6 days)
    - Acute Care – ensure sufficient housekeeping resources to reduce delay in cleaning rooms between patients

Next steps

Task Group members are invited to provide feedback on this document, as well as gaps in the themes and strategies identified within.

In follow-up to the discussion at the September 29 meeting, health authorities will be invited to create a plan focused on strategies to address ED and hospital capacity, including specific actions, their intended impact and timeline for implementation. The plan should also identify any barriers to implementation and where Ministry of Health supports may be required to address them. Plans should be provided to the Ministry by October 14, 2022.

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Emergency Department & Hospital Capacity Task Group

October 6, 2022

RECORD of ACTIONS and/or DECISIONS

Attendees:

Ministry of Health

Kristy Anderson (Chair), ADM, Hospital & Provincial Health Services
Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation
Leah Smith, A/Executive Director, Hospital Services Branch
Leann Cairns, Director, Hospital Services Branch
Donna Wilkinson, Manager, Acute Care Policy and Decision
Leslie Halston, Program Analyst, Secretariat

Doctors of BC

Dr. Quynh Doan, Co-President, Section of Emergency Medicine (11:15am)
Dr. Gord McInnes, Co-President, Section of Emergency Medicine
Dr. Steve Fedder, Co-President, Section of Emergency Medicine

Health Authorities

VIHA: Marko Peljhan, VP Pandemic Planning, Interim VP Clinical Operations South Island, Cowichan Valley
VIHA: Dr. Tracey Stephenson, Medical Director, Acute Flow & Utilization
VIHA: Mathew Erikson, Director, Access and Flow, Hospital at Home

FHA: Laurie Leith, VP Regional Hospitals and Health Services
FHA: Dr. Craig Murray, ED physician, Surrey Memorial Hospital

NHA: Penny Anguish, COO, Northern Interior Health Service Delivery Area
NHA: Dr. Patrick Rowe, Medical Lead Northern Health Emergency Room and Trauma Services

IHA: Richard Harding, Executive Director North Okanagan
IHA: Dr. Aron Zuidhof, ED Physician, Medical Director, Emergency Network

VCH: Dr. Eric Grafstein, Regional Department Head Emergency VCH-PHC
VCH: Lori Korchinski, Regional Director Emergency & Trauma Programs

PHC: Cindy Elliott, Program Director, Emergency and Access Services
PHC: Norm Peters, Chief Operating Officer

PHSA: Susan Wannamaker, VP Clinical Service Delivery
PHSA: Sarah Bell, Chief Operating Officer, BC Children's Hospital
PHSA: Dr. Garth Meckler, PHSA, Associate Professor Pediatrics and Emergency Medicine, University of British Columbia
Division Head, Pediatric Emergency Medicine BC Children's Hospital

BCEHS: Dr. Leanne Heppell, Executive VP BC Emergency Health Services
BCEHS: Dr. Wilson Wan, Interim Chief Medical Officer

FNHA: Dr. Jeffery Beselt, Community Physician, Kwadacha and Tsay Keh Dene Nations and Emergency Physician, Campbell River

Regrets

Dr. Sam Bugis, VP Physician Affairs & Specialist Practice
FHA: Dermot Kelly, VP Community Hospitals and Health Services
VCH: Michelle de Moor, VP Vancouver Acute Services
VCH: Dr. Hussein Kanji, Provincial Lead & Chair, Critical Care Medicine BCPSQC & CCSEC, Senior Medical Director, Health Emergency Management BC (HEMBC)
FNHA: Gary Housty, A/Executive Director, OCNO

Emergency Department & Hospital Capacity Task Group

October 6, 2022

1. **Call to Order:**
   - Kristy Anderson, Chair, called the Task Group to order and initiated roundtable introductions.

2. **Summary of What We Heard - All Day Planning Session**

   - The group reviewed the information and ideas gathered at the September 29 session.
   - Themes emerged and were categorized as short/medium/long term goals and assigned priorities
     - 24/7 patient flow and supports
     - Communication
     - Diagnostic Imaging & Labs
     - Rural and Remote ED and Transportation
     - System Triggers and Response Strategies
     - Triage Away from ED and Improved Integration with Urgent and Primary Care Clinics (UPCCs)

   The Ministry of Health advised internal dialogue has begin regarding the following identified initiatives:
   - Congestive Heart Failure - Target Patient Group
     - Additional data analysis underway
     - Cardiologists working on CHF through Cardiac BC to bring suggestions to Task Group
   - Mental Health and Housing
   - Long Term Care Policy Barriers

   s.13

   - Further Collaboration on HHR strategies
     - Formalized communication pathway to Provincial Health Human Resources Coordination Centre

3. **Creation of Subgroups**
   - Outcome of discussion was to focus on initiatives to improve emergency department (ED) flow and hospital capacity. The group will come together in two working groups to further discuss:

   1. Transition to Discharge Unit
      a. Cohort patients to expedite and support discharge
   2. Physician Expediter
      a. Physician @Triage
      b. Second Look project

   Action/Decision: Ministry will create a survey document to assist in determining which of the initiatives should be prioritized for further consideration in the near-term. Members will be asked to identify individuals to participate in additional sub-working groups focused on specific initiatives.

4. Health Authority Action Update & Plans

- Health Authorities were asked to provide an update on any actions taken since previous meeting.

Action/Decision: Health authorities are to submit plans to the Ministry of Health outlining strategies to be implemented in the fall with a target due date for plan submission Oct 14.

5. Wrap Up

Next Meeting October 13, 2022

FOR ACTION: Survey - Emergency Department and Hospital Capacity Task Group - DUE Wed Oct 12 @ 8:30 am

From: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>

To: XT:Anguish, Penny HLTH:IN <penny.anguish@northernhealth.ca>, Heppell, Leanne EHS:EX <Leanne.Heppell@bcehs.ca>, marko.peljhan@islandhealth.ca, XT:Leith, Laurie HLTH:IN <laurie.leith@fraserhealth.ca>, susan.wannamaker@phsa.ca, npeters5@providencehealth.bc.ca, Garth.Meckler@cw.bc.ca, Steven Fedder s.22 Quynh Doan <qdoan@bcchr.ca>, Gord McInnes s.22 Sam Bugis <sbugis@doctorsofbc.ca>, Anderson, Kristy HLTH:EX <Kristy.Anderson@gov.bc.ca>, O'Donnell, Maureen HLTH:EX <Maureen.ODonnell@gov.bc.ca>, XT:ODonnell, Maureen HLTH:IN <modonnell@phsa.ca>, Craig.Murray@fraserhealth.ca, XT:HLTH Neill, Debbie <dneill@providencehealth.bc.ca>, celliott@providencehealth.bc.ca, XT:Jakob, Theo EHS:IN <tjakob@providencehealth.bc.ca>, Harding, Richard <Richard.Harding@interiorhealth.ca>, Aron.Zuidhof@interiorhealth.ca, XT:HLTH Grafstein <egrafstein@providencehealth.bc.ca>, Patrick.Rowe@northernhealth.ca, XT:HLTH Bell, Sarah <sjbell@cw.bc.ca>, tracey.stephenson@islandhealth.ca, Wan, Wilson EHS:EX <Wilson.Wan@bcehs.ca>, Lori.Korchinski@vch.ca, tracey stephenson s.22 XT:Erickson, Matthew EHS:IN <Matthew.erickson@islandhealth.ca>, Dr. Jeffrey Beselt <Jeffrey.Beselt@fnha.ca>

Cc: Tanya Miller <tmiller@doctorsofbc.ca>, Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>, Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>, XT:Rasmussen, Kristin HLTH:IN <kristin.rasmussen@phsa.ca>, Leverman, Charly HLTH:EX <Charly.Leverman@gov.bc.ca>, Johnston, Sandra (Sandie) [NH] <Sandra.Johnston@northernhealth.ca>, Davies, Gillian <Gillian.Davies@islandhealth.ca>, Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>

Sent: October 10, 2022 10:53:05 AM PDT

Attachments: Short Term Enablement & Planning Suites (STEPS) May 2022.pptx, Initiative Prioritization Survey 2022.10.10.docx, Physician at Triage- Version 10.1 January 19, 2018.pptx

Hello,

Thank you for your participation during the October 6th Emergency Department and Hospital Capacity Task Group meeting. The discussion at the meeting helped to build further consensus regarding initiatives to improve emergency department and hospital capacity. Building on that dialogue, attached is a survey designed to assist in determining which of the initiatives should be prioritized for further consideration in the near-term. The survey also invites you to identify individuals to participate in sub-working groups focused on specific initiatives listed within the document.

It would be appreciated if you could complete the survey by **8:30 am on Wednesday, October 12, 2022**, and return it to: Donna.Wilkinson@gov.bc.ca and Leslie.Halston@gov.bc.ca. Results will be compiled and discussed at the October 13th Task Group meeting.

Also attached for your information are presentations that provide additional information on the **Physician at Triage** initiative piloted by Interior Health (thanks to Dr. Gord McInnes) and Island Health's Short Term Enablement & Planning Suites or **STEPS** Program (thanks to Matt Erickson, Marko Peljhan and Dr. Tracey Stephenson).

Please don't hesitate to connect with me if you have questions about the attached.

Happy Thanksgiving, Leah

Leah M Smith *(she / her / hers)*
A/Executive Director, Hospital Services Branch
Hospital and Provincial Health Services Division, Ministry of Health

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Short Term Enablement & Planning Suites (STEPS)

May 2022

Excellent health and care for everyone, everywhere, every time.

Rationale

- Create community options for ALC designated clients
- There are 9 ALC designations for patients in acute care, 7 of which identify clients who could potentially be supported by CHS
- Within each designation, patients have a variety of medical needs and barriers to discharge
- A variety of care options are required to ensure safe care for clients and staff in the most cost-effective model

ALC Designation Categories

- ALC-ACT: Requires activation program in community or residential setting
- ALC-COM: Requires community based services from MHSU, BIP, CLBC, Hospice
- ALC-CWB: Healthy baby who accompanies patient
- ALC-DIAG: Requires diagnostics available as outpatient but physician requires patient to stay in hospital
- **ALC-HES: Barriers to discharge of Housing, Economic or Social issues**
- **ALC-HCC: Probable HCC client who requires assessment**
- ALC-AAPP: Awaiting completion of assessment for LTC
- ALC-AAP: Assessed for LTC and waiting placement to first appropriate bed
- ALC-PRIV: Requires private home care or awaiting admission to private LTC

ALC – HES/HCC

- Barriers to completion of discharge including financial issues, substitute decision maker, complex social issues, appropriate housing unavailable or required equipment unavailable
- Goal to care for client at home but transition time required
- Recommended STEPS Model
  - AL/IL suites meet safe care requirements for this client population and staff
  - Meal service already available onsite
  - Cost is similar to hotel plus catering costs with superior physical environment
  - Modeled on successful STEPS suites at The Meadows

STEPS Program

The Short Term Enablement & Planning Suites (STEPS) program is intended to provide community-based care for some of the Alternate Level of Care (ALC) population currently being held in acute care hospitals.

The first STEPS program opened at The Meadows at Sunridge in Duncan in early 2020

PURPOSE

- For ALC patients who can be safely cared for in a community setting, who are unable to be discharged home
- Patients may require convalescence prior to being able to manage the physical layout of their home or the home may require renovations/repairs/cleaning in order to be safe for the client and/or care staff
- Anticipated length of stay is up to three (3) months

Goal of Admission to STEPS

To provide subsidized, short term, transitional housing to ALC patients who:

- ✓ Require time & support to mitigate discharge barriers to return home
- ✓ Require supported convalescence
- ✓ Have been hospitalized due to caregiver's unexpected short term illness/hospitalization
- ✓ Are at home but admission will avoid imminent unnecessary hospitalization

Important Considerations

- Effective matching of appropriate clients is critical
  - Must be able to direct their own care
  - Cannot have challenging behaviours that disrupt the residential environment or put other vulnerable residents at risk
  - Required care plans are developed and can be managed by community nursing and CHW staff mix

Service Characteristics

- Low to moderate intensity services
- Focus on mitigating barriers, supporting convalescence and improving functional status to support transition to discharge location
- Staffing provided by local CHS team
- Cohorting results in improved efficiency of care, particularly for clients requiring overnight care

Admission Process

- Hospital Liaison & STEPS case manager review potential clients for eligibility
- Discharge plans created collaboratively by acute staff and STEPS case manager (CM)
- Building operator provided client information and anticipated admission date
- CM & Operator orient client to building

During Admission

- Ongoing discharge planning/case management provided by STEPS CM
- Ongoing assessment conducted by STEPS CM to align service provision to client need throughout healing process
- CM facilitates referrals to other CHS clinicians as required

Discharge Criteria

- Client is clinically and functionally able to manage safely at home with or without supports
- Clinical/functional goals *not* met but no further progress can be made and ongoing care location is required
- Care needs can no longer be met in this setting
- Client is medically unstable and requires admission to hospital
- Client issues/behaviours are incompatible with safety of other residents, despite care planning
- Client is being admitted to LTC facility

Next Steps

RFPs are posted for STEPS suites in each geographic region:

- Nanaimo/Oceanside
- Comox Valley & Campbell River
- Greater Victoria

Thank you for your participation during the October 6th Emergency Department and Hospital Capacity Task Group meeting. At the meeting there was consensus on several initiatives to improve emergency department (ED) and hospital capacity. It was agreed that sub-working groups would come together to further investigate two promising initiatives:

1) **Transition to Discharge Support Unit** – Cohorting patients to enable rapid, supportive discharge planning.

2) **Physician at Triage/ Second Look Program** – Engagement of a senior ED physician to provide expedited triage, peer review of 'decision to admit' like the Second Look program piloted by Island Health, and possibly provide consultative support for LTC teams considering transfer of a resident to the ED.

Please indicate in the table below if you or an individual from your organization can participate in the sub-working groups responsible for rapid exploration and possible implementation of these two initiatives.

Sub Working Group	Your Name and/or Other Organization Representative	Email address
1. Transition Support Unit to cohort patients for supportive discharge		
2. Physician at Triage/ Second Look Program		

The Task Group also identified other promising initiatives, listed below, that require further investigation. It was agreed that an informal survey would be circulated to determine which of the initiatives should be prioritized for further consideration.

Sub-working groups will be created to support the highest priority initiatives first. The sub-working groups will make recommendations to the Task Group about whether and/or how to proceed with the initiative, risks, enablers, barriers, and preliminary implementation plans. Sub-working groups will also be responsible to identify key data / metrics to measure the impact and ongoing performance of the initiative.

Above all else, in making recommendations regarding whether to proceed with an initiative, the working group must consider if implementation is possible within the current health human resources (HHR) context.

Please complete the survey below and return it by **8:30 am on Wednesday, October 12, 2022,** and return it to: Donna.Wilkinson@gov.bc.ca. and Leslie.Halston@gov.bc.ca. Results will be compiled and discussed at the October 13th Task Group meeting.

1. 24/7 patient flow and supports

- Identify strategies to address challenges to discharge and patient flow in the ED and hospital due to scheduling of resources (limited resources available on evenings, overnight and weekends).
- Examples – limited overnight availability of in-person specialist consultations; rapid access to in-hospital allied health services on evenings and weekends; and limited access to community supports on evenings and weekends to enable discharge.

PRIORITY: Low ☐ Medium ☐ High ☐

DO YOU WISH TO PARTICIPATE IN THIS SUB-WORKING GROUP: Yes ☐ No ☐

IS THERE ANOTHER PERSON / SUBJECT MATTER EXPERT FROM YOUR ORGANIZATION WHO SHOULD BE INCLUDED IN THIS SUB-WORKING GROUP: No ☐ Yes ☐

Name Click or tap here to enter text. EMAIL: Click or tap here to enter text.

TIMELINE FOR IMPLEMENTATION: Fall 2022 ☐ By March 31, 2023 ☐ Six months or longer ☐

2. Communication

- Provide patients and families with improved information about community options for care and how to access them, as well as additional information about accessing acute care (may include information about wait times, information about appropriate use of ED, etc).
- Use of apps to improve patient access to information about where to receive care.

PRIORITY: Low ☐ Medium ☐ High ☐

DO YOU WISH TO PARTICIPATE IN THIS SUB-WORKING GROUP: Yes ☐ No ☐

IS THERE ANOTHER PERSON / SUBJECT MATTER EXPERT FROM YOUR ORGANIZATION WHO SHOULD BE INCLUDED IN THIS SUB-WORKING GROUP: No ☐ Yes ☐

Name Click or tap here to enter text. EMAIL: Click or tap here to enter text.

TIMELINE FOR IMPLEMENTATION: Fall 2022 ☐ By March 31, 2023 ☐ Six months or longer ☐

3. Diagnostic Imaging & Labs

- Opportunities to explore process improvements, point of care testing, and access to diagnostics in the ED.
- Also noted that patients come to the ED for tests they cannot access in the community and in some cases GPs in community cannot order.

PRIORITY: Low ☐ Medium ☐ High ☐

DO YOU WISH TO PARTICIPATE IN THIS SUB-WORKING GROUP: Yes ☐ No ☐

IS THERE ANOTHER PERSON / SUBJECT MATTER EXPERT FROM YOUR ORGANIZATION WHO SHOULD BE INCLUDED IN THIS SUB-WORKING GROUP: No ☐ Yes ☐

Name Click or tap here to enter text. EMAIL: Click or tap here to enter text.

TIMELINE FOR IMPLEMENTATION: Fall 2022 ☐ By March 31, 2023 ☐ Six months or longer ☐

4. Rural and Remote ED and Transportation

Focus on development of strategies to address challenges specific to smaller, rural and remote EDs, inclusive of transportation issues and service impacts.

PRIORITY: Low ☐ Medium ☐ High ☐

DO YOU WISH TO PARTICIPATE IN THIS SUB-WORKING GROUP: Yes ☐ No ☐

IS THERE ANOTHER PERSON / SUBJECT MATTER EXPERT FROM YOUR ORGANIZATION WHO SHOULD BE INCLUDED IN THIS SUB-WORKING GROUP: No ☐ Yes ☐

Name Click or tap here to enter text. EMAIL: Click or tap here to enter text.

TIMELINE FOR IMPLEMENTATION: Fall 2022 ☐ By March 31, 2023 ☐ Six months or longer ☐

5. System Triggers and Response Strategies

Criteria / triggers for viable actions and strategies that support distributed risk, reduces silos and optimize patient care and flow during periods of ED crowding and increased hospital occupancy.

PRIORITY: Low ☐ Medium ☐ High ☐

DO YOU WISH TO PARTICIPATE IN THIS SUB-WORKING GROUP: Yes ☐ No ☐

IS THERE ANOTHER PERSON / SUBJECT MATTER EXPERT FROM YOUR ORGANIZATION WHO SHOULD BE INCLUDED IN THIS SUB-WORKING GROUP: No ☐ Yes ☐

Name Click or tap here to enter text. EMAIL: Click or tap here to enter text.

TIMELINE FOR IMPLEMENTATION: Fall 2022 ☐ By March 31, 2023 ☐ Six months or longer ☐

6. Triage Away from ED and Improved Integration with Urgent and Primary Care Clinics (UPCCs)

- Strategies to support improved patient flow between UPCCs and EDs.
- Improved access to urgent care for specific populations such as children and youth, frail seniors etc.
- May also include strategies that allow nurses to triage away from the ED to other care pathways (risk tolerance noted as a possible challenge; alternative care pathways would need to be clearly defined).

PRIORITY: Low ☐ Medium ☐ High ☐

DO YOU WISH TO PARTICIPATE IN THIS SUB-WORKING GROUP: Yes ☐ No ☐

IS THERE ANOTHER PERSON / SUBJECT MATTER EXPERT FROM YOUR ORGANIZATION WHO SHOULD BE INCLUDED IN THIS SUB-WORKING GROUP: No ☐ Yes ☐

Name Click or tap here to enter text. EMAIL: Click or tap here to enter text.

TIMELINE FOR IMPLEMENTATION: Fall 2022 ☐ By March 31, 2023 ☐ Six months or longer ☐

The Ministry of Health has begun internal dialogue regarding following identified initiatives:

1. Congestive Heart Failure - Target Patient Group
    - Additional data analysis underway
    - Cardiologists working on CHF through Cardiac BC to bring suggestions to Task Group
2. Mental Health and Housing
3. Long Term Care Policy Barriers
    - 72 hours to accept placement
    - Paying caregivers
    - Suspend financial assessments
    - Public Guardian and Trustee involvement resulting in long stays in hospitals
4. Further Collaboration on HHR strategies
    - Formalized communication pathway to Provincial Health Human Resources Coordination Centre

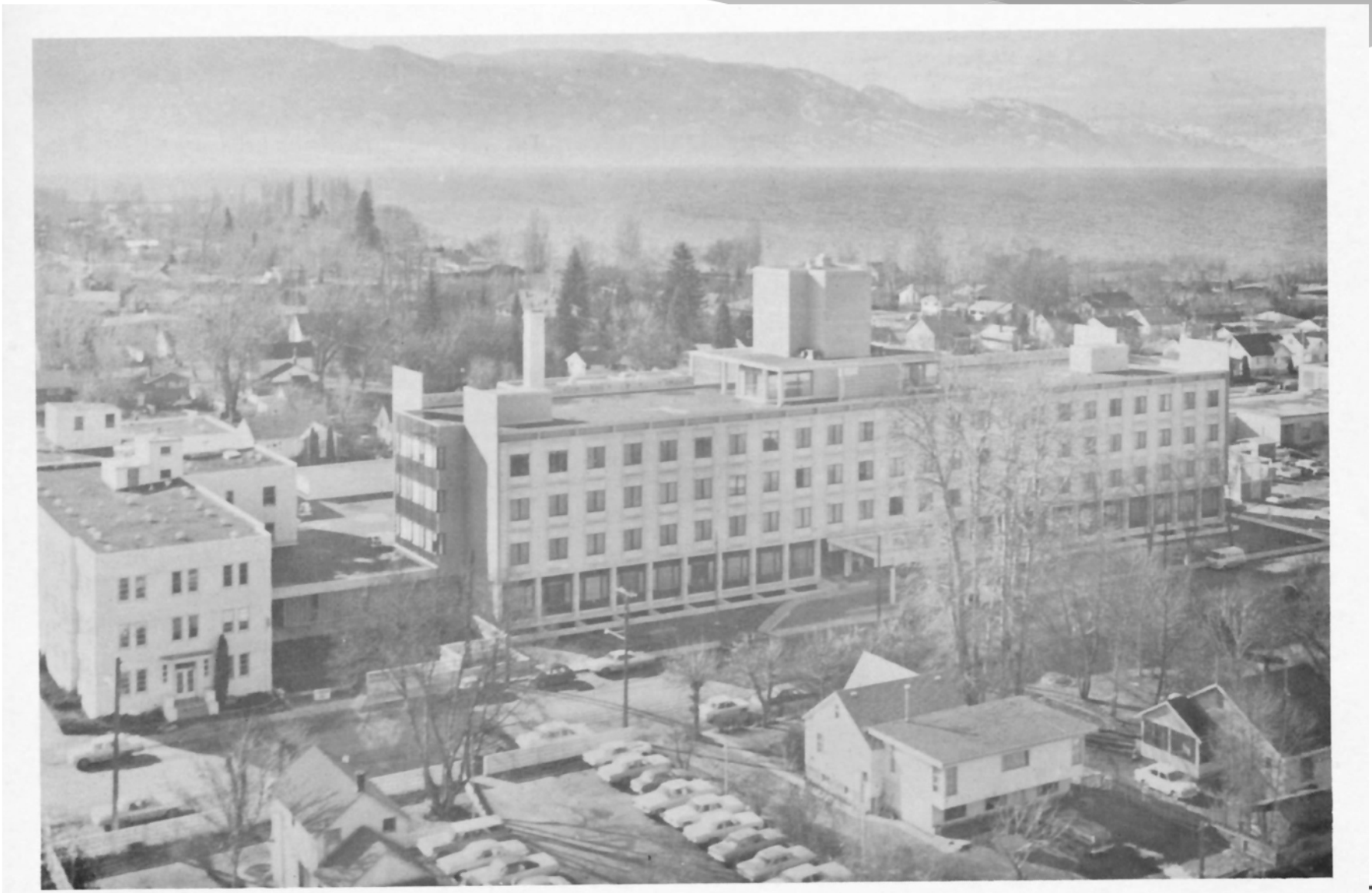
KGH Physician at Triage Trial 2017

Dr. Mike Ertel
VP Medicine and Quality
Interior Health Authority

Interior Health
Every person matters

Kelowna General Hospital

1970



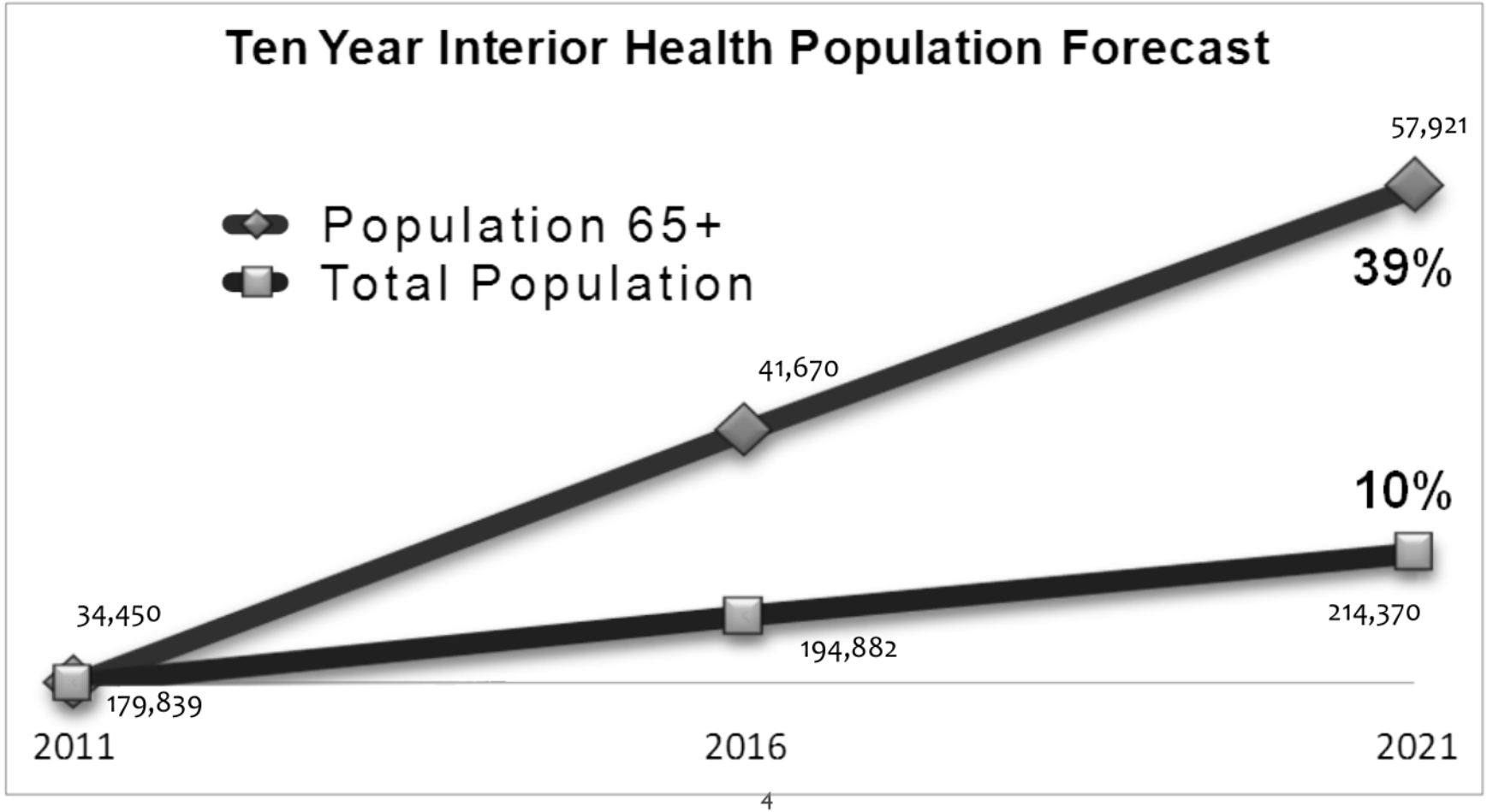
1970 - The new hospital is completed and is joined to the 1940 - 1952 hospital.

Kelowna General Hospital

2015

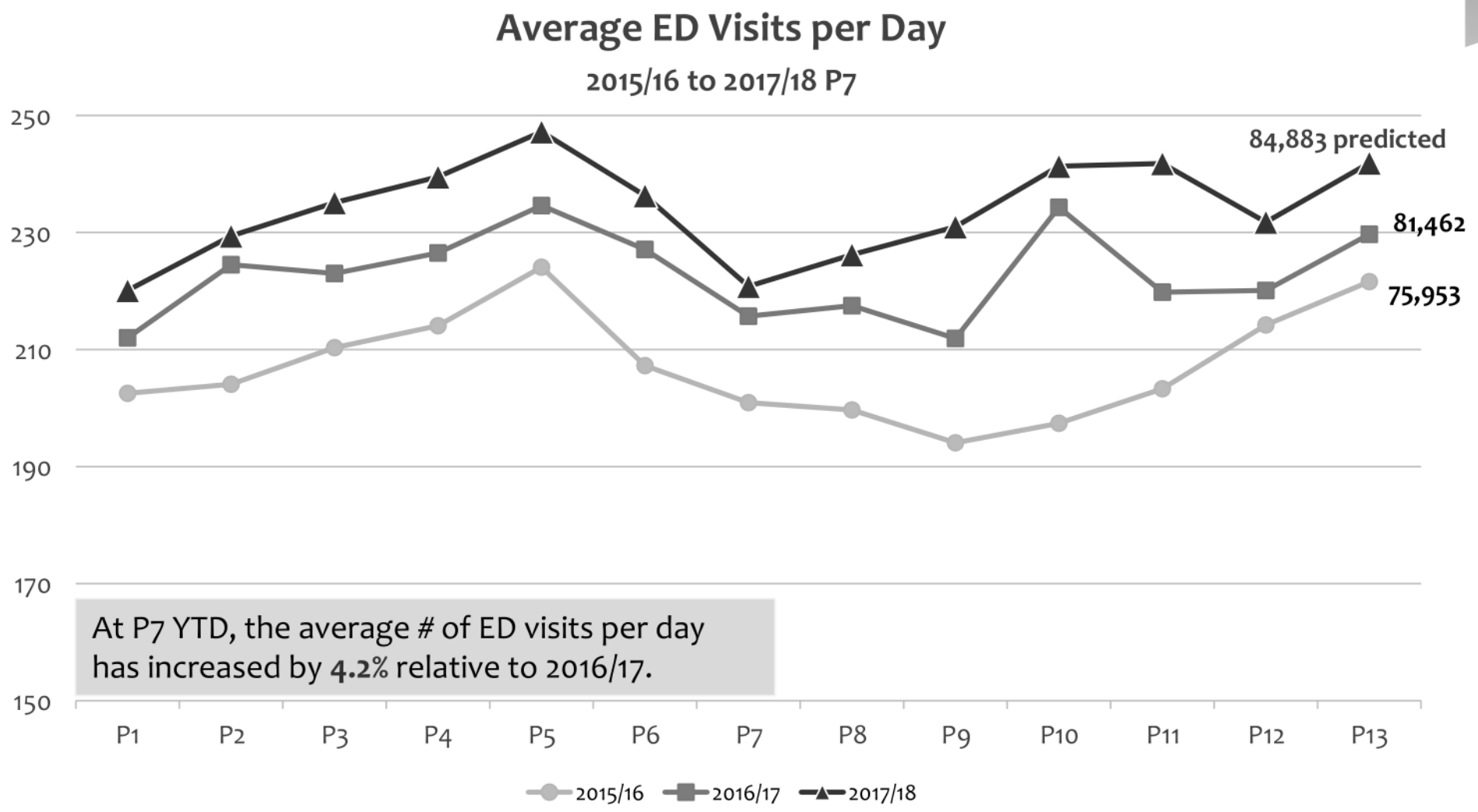
Background

- Population growth
  - Kelowna's population increased 8.4% from 2011-2016
  - In 2016, approximately 21% of the population was 65 years +



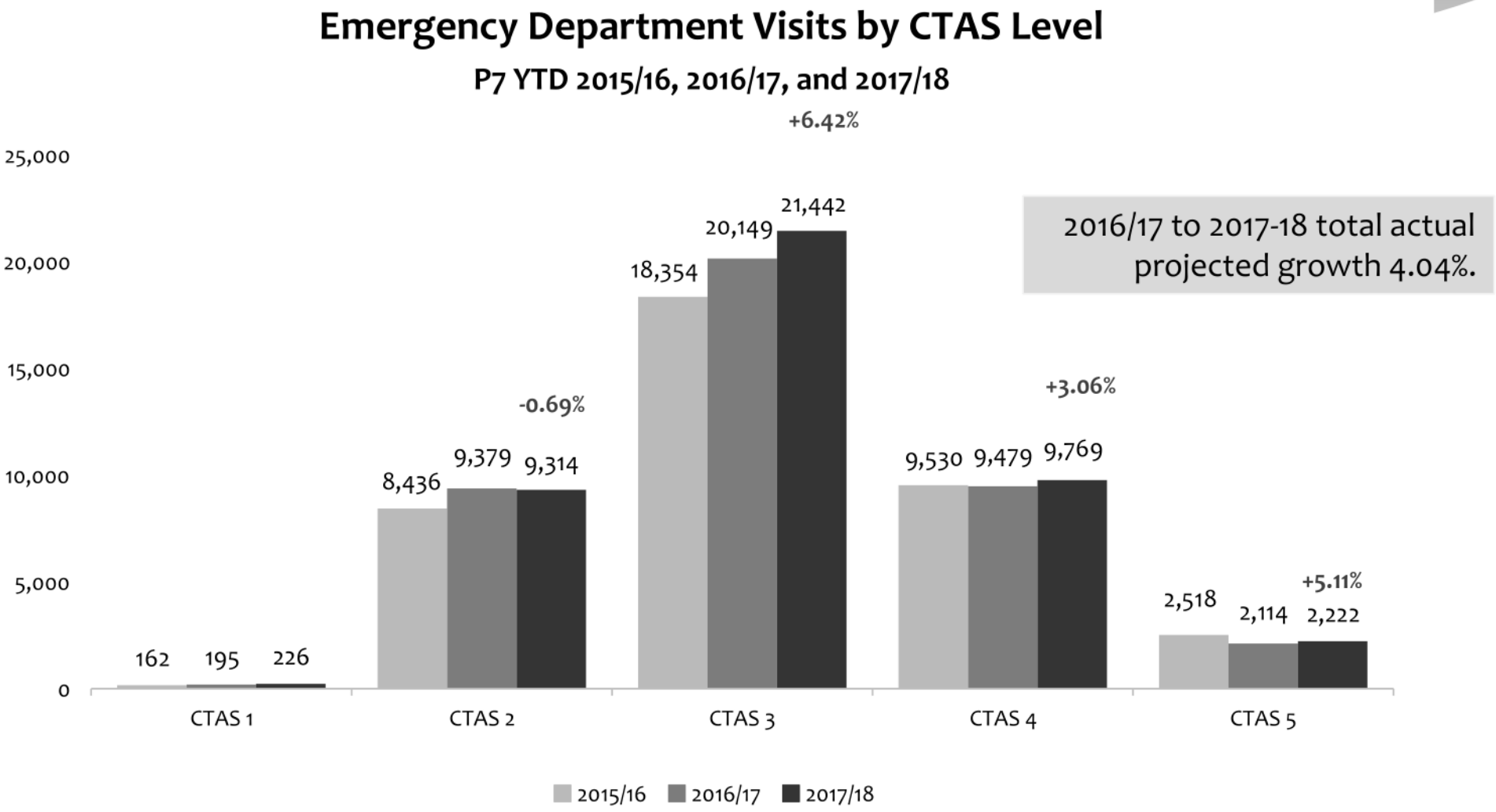
Source: 2011 and 2016 Census Profile - Kelowna CMA

ED Visits per Day



	16/17	17/18	% Change
Average # of ED visits/day	223.3	232.6	+4.2%
Average # of admits/day	35.9	37.2	+3.6%

ED Visits by CTAS Level



Concept

- KGH trialed a quality improvement proof of concept to address increasing patient volumes , improve Emergency Department patient flow, and time to care. The ED Team implemented a physician /nurse in Triage collaborative during the May-September long weekends.

How Is the Physician at Triage (PAT) Process Different than Standard Triage?

- The PAT is an innovative triage process
- The PAT is flexible and adjusts its focus or use to meet fluctuating demands of the rest of the department
- The PAT uses ongoing communication and needs assessment collaboration between ED MDs, triage RN , ED Charge Nurse , Unit Clerk and the entire PAT team
- The PAT has the ability to treat any acuity of patient arriving to ED based on department needs, including those requiring IV medications, inpatient admissions and even stroke codes. However, it primarily functions as a quick-care hybrid unit within the ED

Physician Role

- Assist in patient triage destination decisions in the emergency department and initiate diagnostic testing and therapeutics as soon as possible
- The priority is on higher acuity patients , including BCAS and RCMP, with the intent to initiate therapeutic interventions as well as diagnostic and laboratory investigations as early as possible
- The PAT works in collaboration with the nursing triage team as well as the PCC to help facilitate patient flow through the Department
- PAT may initiate simple interventions in triage that might negate the need for further assessment in the ED. These patients who are then discharged must register and create a medical record which is the responsibility of the PAT to complete

Nursing Staff Roles

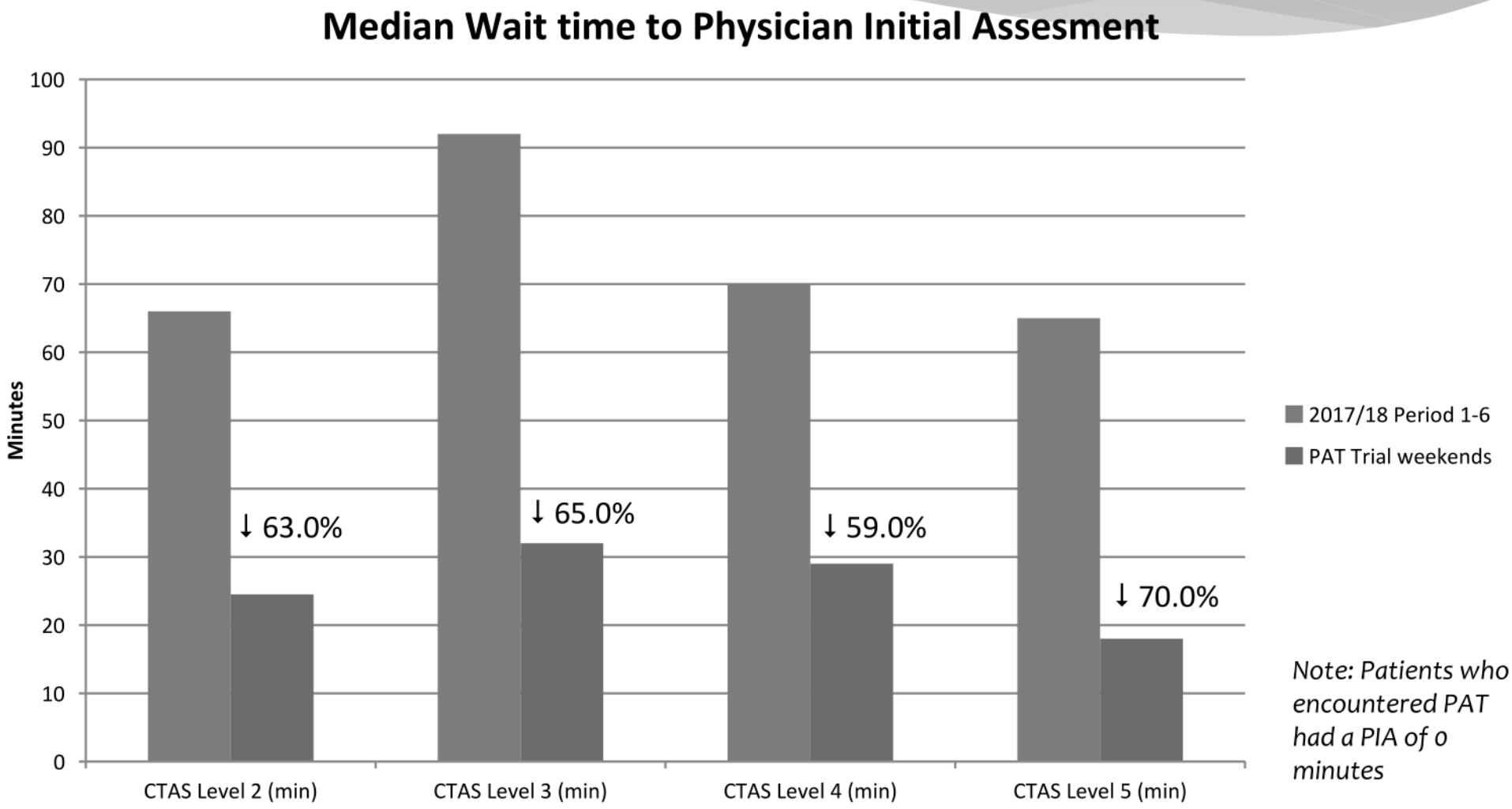
Triage RN Support

- Performs rapid triage assessment with PAT
- Initial selective documentation of vital signs in consultation with PAT
- Order management with PAT for treatments/tests/labs/meds
- Performs treatments/medication administration for PAT patients
- Manages the patient flow within waiting room, PAT, and flow to other zones in Emergency Department

Key Goals

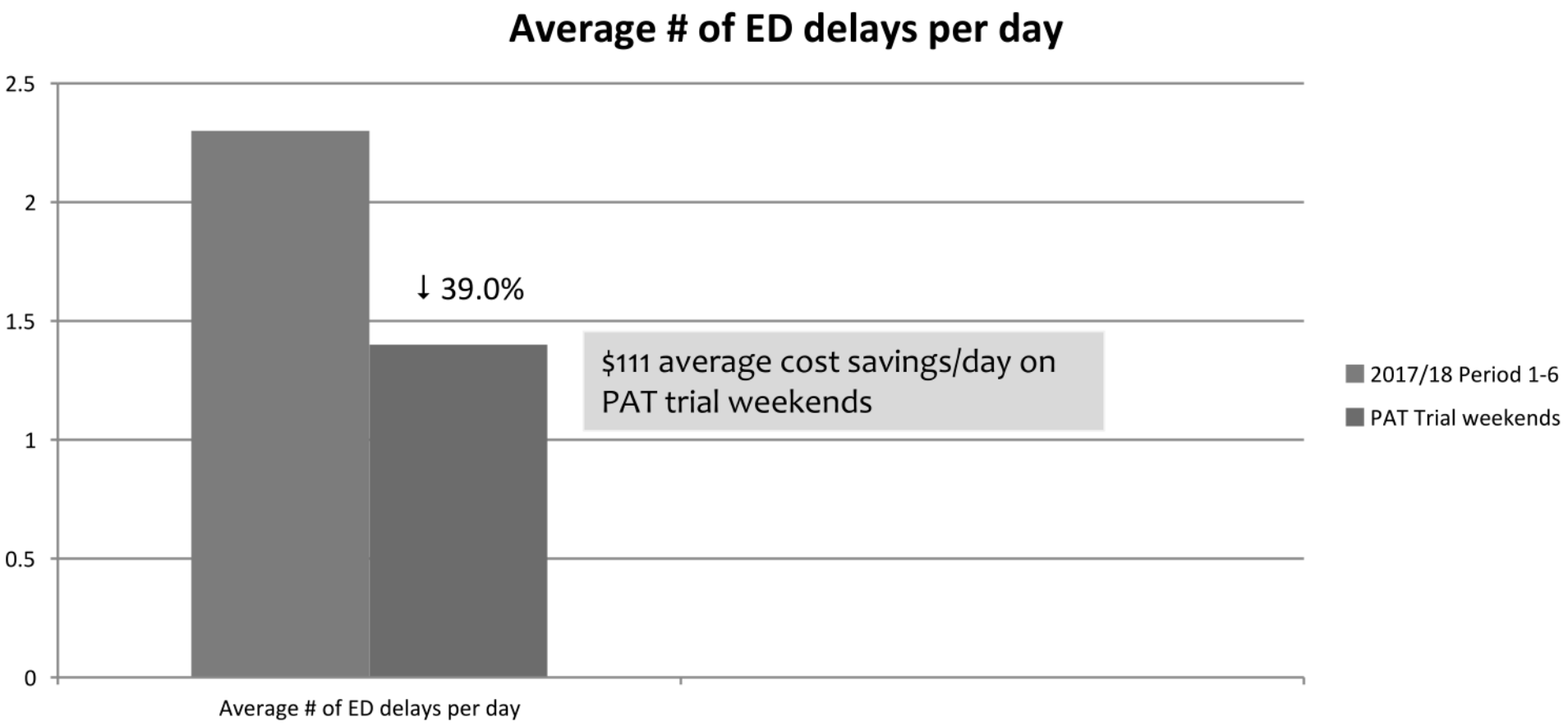
- Reduced Physician Initial Assessment (PIA) times
- Decrease in BCAS offload delays
- Reduced wait times and ED length of stay
- Decrease in time to inpatient bed
- Decrease number of patients leaving without being seen
- Increase care provider satisfaction
- Increased patient satisfaction

Reduced Physician Initial Assessment Time

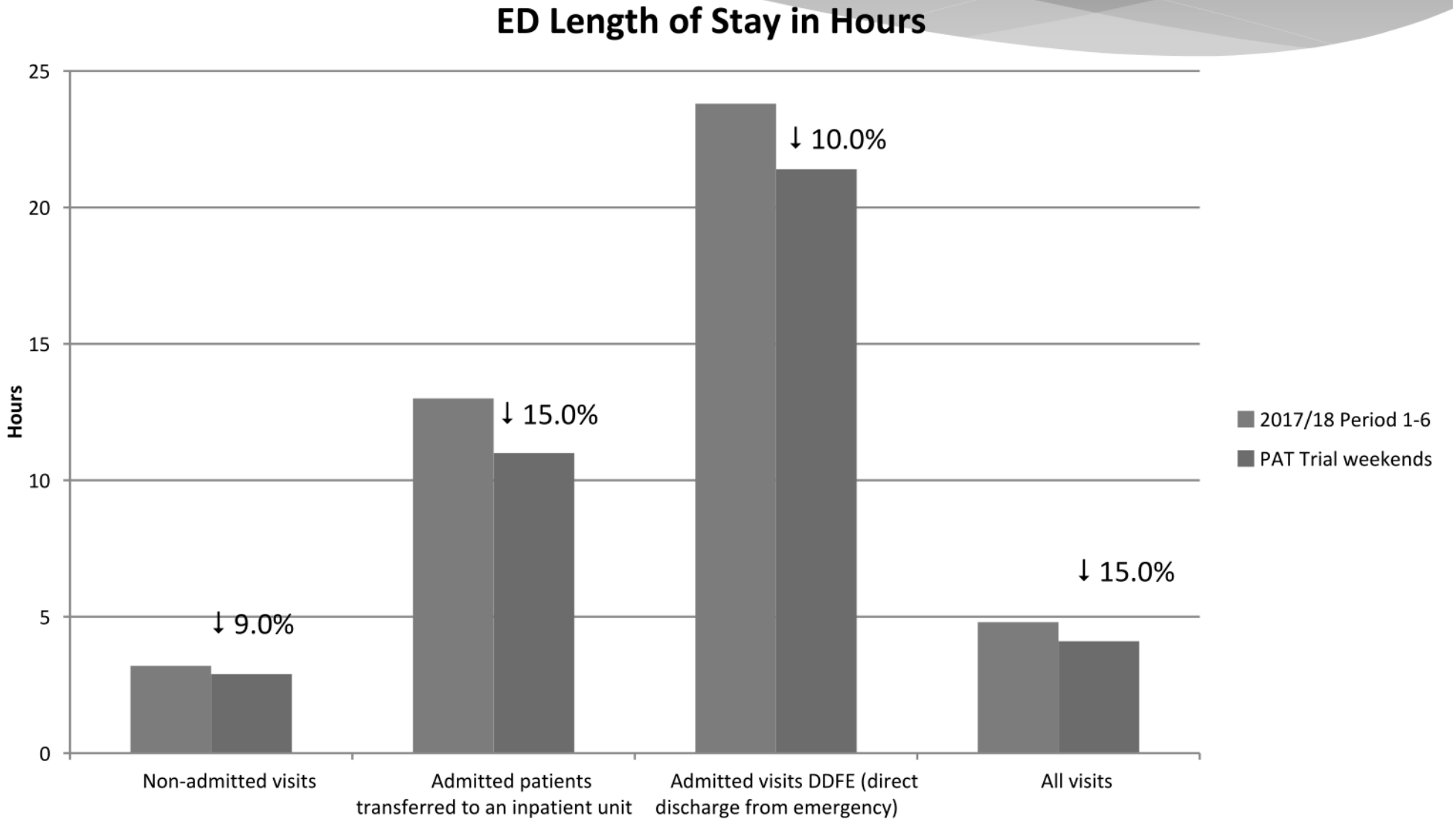


Note: Patients who encountered PAT had a PIA of 0 minutes

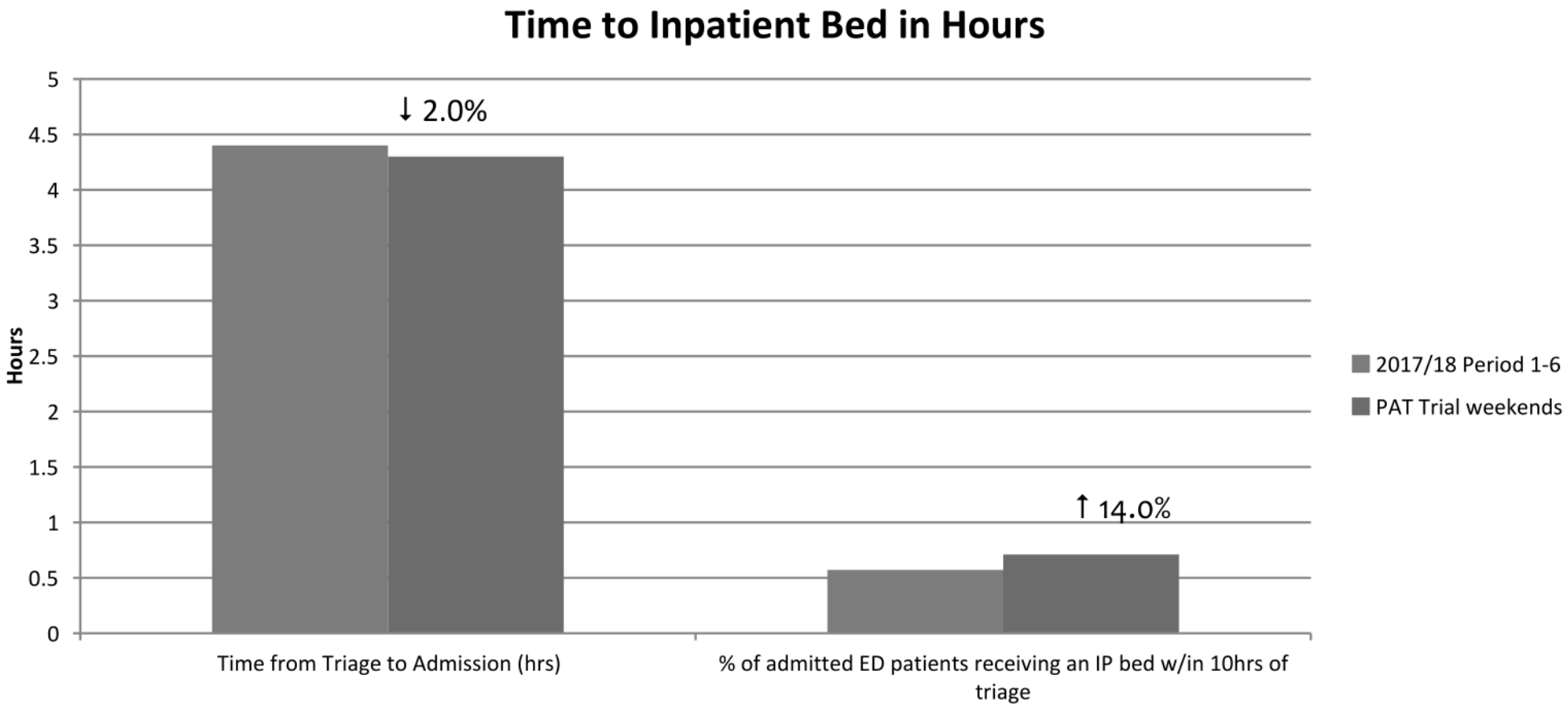
Decrease in BCAS offload delays



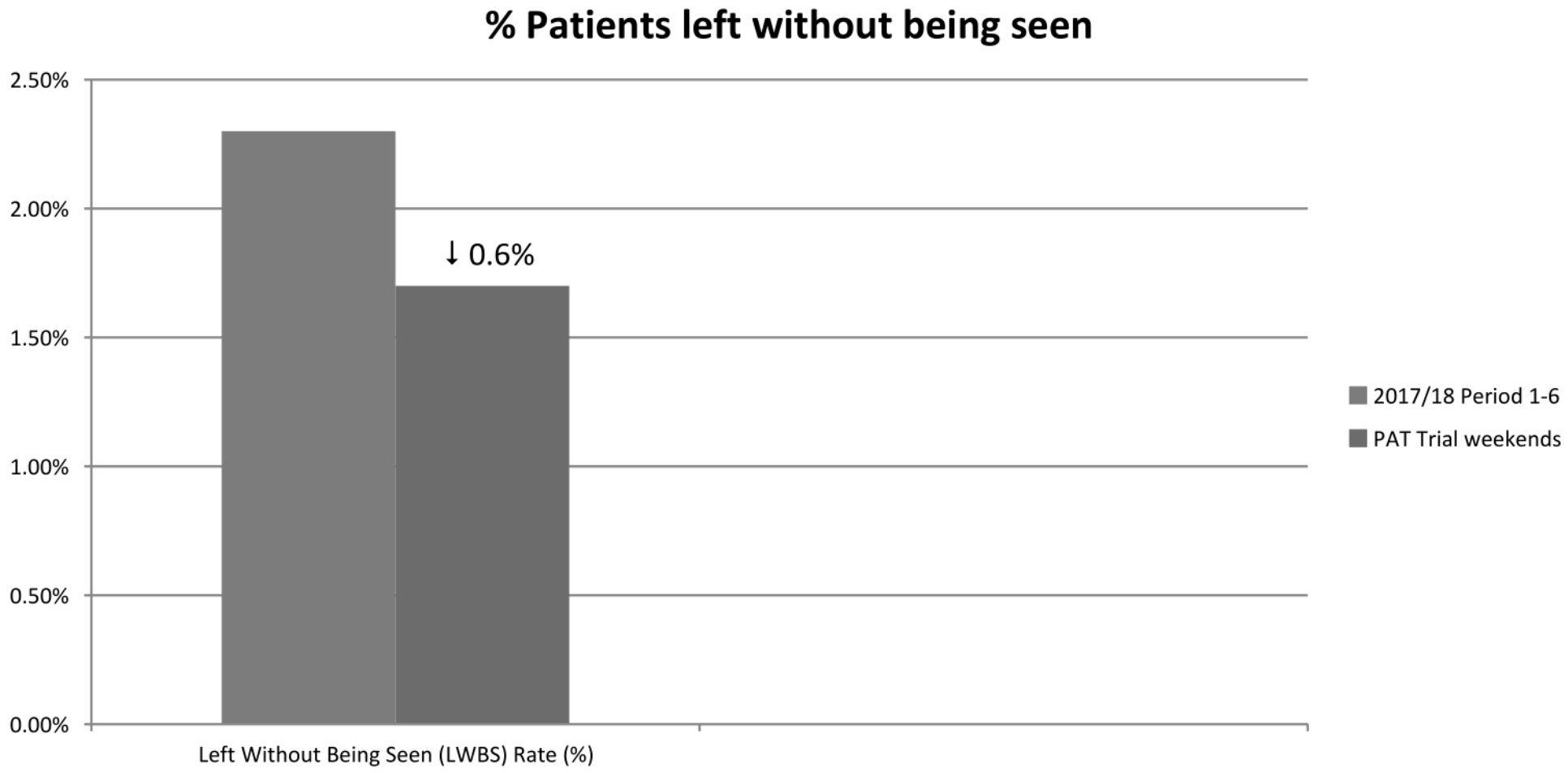
Reduced ED Length of stay



Decrease in time to inpatient bed



Decrease number of patients leaving without being seen



Inter-professional Collaboration

- *"It improves patient care, faster time to imaging and medications and provides people with early discharge options. Reduces pain by early removal of spinal precautions, early procedures (reductions, etc.). Improves staff morale, less patient and family complaints"*

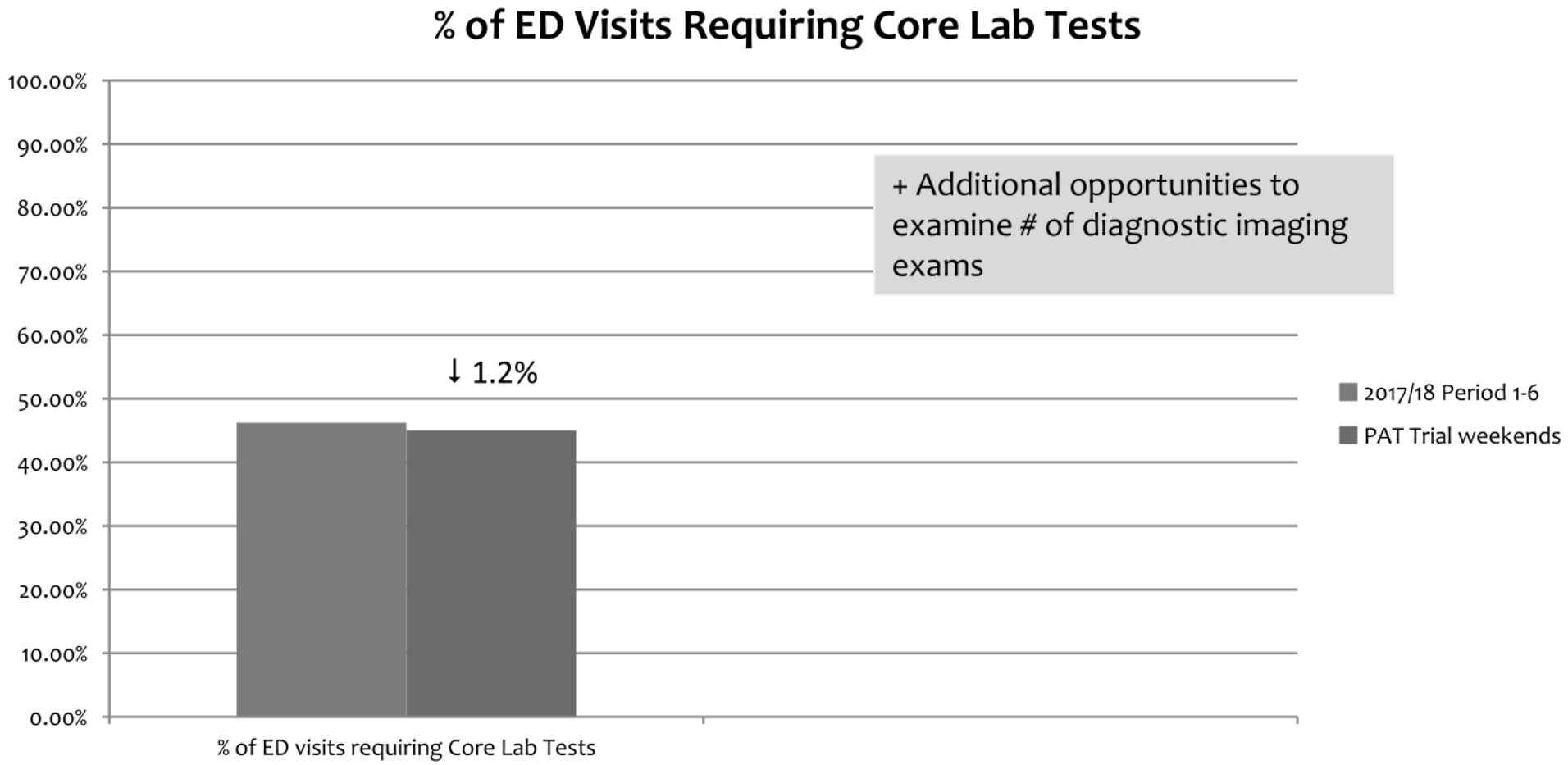
- *"It was interesting and enjoyable to work with the physicians on such a close level. It certainly helped eliminate any confusion/arguments as to where a patient was triaged to"*

- *"It made working at triage much more enjoyable and less stressful. Patients were happier due to decreased wait times to see a physician initially and to have orders done promptly"*

Patient Satisfaction

"I visited Kelowna arriving July 1 2017-the night of my arrival symptoms lingering from a sinus infection exacerbated to bilateral ear fullness and right ear ache with serous sang drainage. Being an ER nurse s.22 *I was reluctant to go to ER with my ailment but being the long weekend 3 walk in clinics I checked were closed. When I arrived 4-5 people were in line ahead of me. I was triaged swiftly and professionally and an ER doc working at triage examined me, I made a chart, got my prescription and teaching and was on my way- less than 30 mins! Thank you Kelowna ER-now that is patient centered care!"*

Unanticipated Opportunities



Trial Weekend Summary

ED Metric	Average		% Change
	2017-18 Fiscal Periods 1-6	PAT Trial Weekends	
Median wait time to Physician Initial Assessment:			
· CTAS Level 2 (min)	66.0 min	24.5 min	↓ 63.0%
· CTAS Level 3 (min)	92.0 min	32.0 min	↓ 65.0%
· CTAS Level 4 (min)	70.0 min	29.0 min	↓ 59.0%
· CTAS Level 5 (min)	65.0 min	18.0 min	↓ 70.0%
BC Ambulance Service (BCAS) ED Delays			
· Average # of ED delays per day	2.3	1.4	↓ 39.0%
· Average cost per day of ED delays ($)	$284	$173	↓ $111
ED Length of Stay (LOS):			
· Non-admitted visits	3.2 hrs	2.9 hrs	↓ 9.0%
· Admitted patients transferred to an inpatient unit	13.0 hrs	11.0 hrs	↓ 15.0%
· Admitted visits DDFE (direct discharge from emergency)	23.8 hrs	21.4 hrs	↓ 10.0%
· All visits	4.8 hrs	4.1 hrs	↓ 15.0%
Admission Rate (All Visits) (%)	15.8%	14.2%	↓ 1.6%
Decrease in time to inpatient bed			
Time from Triage to Admission (hrs)	4.4 hrs	4.3 hrs	↓ 2.0%
% of admitted ED patients receiving an IP bed w/in 10hrs of triage	57.1%	71.0%	↑ 14.0%
Left Without Being Seen (LWBS) Rate (%)	2.3%	1.7%	↓ 0.6%
Unanticipated Opportunities			
% of ED visits requiring Core Lab Tests	46.2%	45.0%	↓ 1.2%
# of diagnostic imaging exams per 100 ED visits	No discernable trend		

Actuals to Operationalize Proof of Concept

Provider	Hours worked	Cost

s.13; s.17

Cost to Operationalize per year

Provider	Hours/day	FTE	Cost

s.13; s.17

Thank you.

Emergency Department and Hospital Capacity Task Group

AGENDA

October 13, 2022, 11 am – 1 pm

Click here to join the meeting

Meeting ID: 213 s.15; s.17

Passcode: s.15; s.17

Mandate: *The Emergency Department and Hospital Capacity Task Group (the Task Group) will develop a provincially coordinated approach and identify solutions to address capacity challenges facing emergency departments and hospitals. The work of the Task Group will include rapid identification, development and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.*

1 – Call to Order		**Lead**	**Attachments**
11:00 – 11:10	• Introductions and agenda review	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division	
2 – Initiative Prioritization Survey		**Lead**	**Attachments**
11:10 – 11:45	• Review of survey feedback • Identify additional subgroup attendees	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division	
3 – Health Authority Action Update		**Lead**	**Attachments**
11:45 –	• Health authorities to provide an update on actions taken since the last meeting •	Health Authorities	
4 –		**Lead**	**Attachments**
	•		
5 – Wrap up		**Lead**	**Attachments**
12:45 – 1:00 pm	• Review of action items and next steps	**Kristy Anderson,** ADM, Hospital and Provincial Health Services	

Emergency Department and Hospital Capacity Task Group

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1 – Call to Order		**Lead**
11:00 – 11:10	• Welcome and call for additional agenda items	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
2 – Initiative Prioritization Survey Results		**Lead**
11:10 – 11:40	• Review of survey results and confirm initiatives	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
3 – Sub-Working Groups		**Lead**
11:40 – 12:20	• Discussion of mandate of sub-working groups, including membership and timelines	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
4 – Next Steps		**Lead**
12:20 – 12:40	• Discussion of next steps for Task Group, including meeting frequency moving forward	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division

Emergency Department & Hospital Capacity Task Group

October 13, 2022

Fall / Winter Capacity

Planning underway to open additional hospital capacity

- Acute Care
  - Ministry and health authorities have developed acute care capacity plans

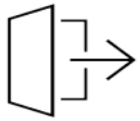
- LTC, AL & Home Health
  - Goal to reduce the number of alternate level of care (ALC) beds by 40 - 60%
  - Health authorities plans due to Ministry October 19
  - Next Steps – Bring Acute and Home & Community Care Teams together to ensure strategies and plans are aligned

ED & Hospital Capacity Task Group

Two initiatives priority identified on October 6:

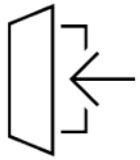
1. Transition to Discharge Support Unit

- Cohorting patients to enable rapid, supportive discharge planning
- Next Steps – Bring Acute and Home & Community Care Teams together to ensure strategies and plans are aligned



2. Physician at Triage / Second Look Program

- Senior ED physician to provide expedited triage
- Peer review of decision to admit; Island Health Second Look program
- Consultative support for LTC teams considering transfer of a patient to the ED



Both initiatives will require the support of sub-working groups

Recap – Initiatives Surveyed

1. 24/7 Patient flow and supports

- Identify strategies to address challenges to discharge and patient flow in the ED and hospital due to scheduling of resources (limited resources available on evenings, overnight and weekends).
- Examples – limited overnight availability of in-person specialist consultations; rapid access to in-hospital allied health services on evenings and weekends; and limited access to community supports on evenings and weekends to enable discharge.

2. Communication

- Provide patients and families with improved information about community options for care and how to access them, as well as additional information about accessing acute care (may include information about wait times, information about appropriate use of ED, etc).
- Use of apps to improve patient access to information about where to receive care.

3. Diagnostic Imaging & Labs

- Opportunities to explore process improvements, point of care testing, and access to diagnostics in the ED.
- Also noted that patients come to the ED for tests they cannot access in the community and in some cases GPs in community cannot order.

4. Rural and Remote ED and Transportation

- Focus on development of strategies to address challenges specific to smaller, rural and remote EDs, inclusive of transportation issues and service impacts.

5. System Triggers and Response Strategies

- Criteria / triggers for viable actions and strategies that support distributed risk, reduces silos and optimize patient care and flow during periods of ED crowding and increased hospital occupancy.

6. Triage Away from ED and Improved Integration with Urgent and Primary Care Clinics (UPCCs)

- Strategies to support improved patient flow between UPCCs and EDs.
- Improved access to urgent care for specific populations such as children and youth, frail seniors etc.
- May also include strategies that allow nurses to triage away from the ED to other care pathways (risk tolerance noted as a possible challenge; alternative care pathways would need to be clearly defined).

Survey Results

Ranking based on **PRIORITY** of Initiatives

(Score: Low = 1, Medium = 2, High = 3)

1. 24/7 Patient Flow and Supports (32)
2. System Triggers and Response Strategies (26)
3. Triage Away from ED and Improved Integration with UPCC (26)
4. Rural and Remote ED and Transportation (25)

Ranking based on **TIMELINE** of Initiatives

(Score: Fall = 3, March 31 = 2, Six+ months =1)

1. Rural, Remote ED and Transportation (25)
2. System Triggers and Response Strategies (23)
3. Triage Away from ED and Improved Integration with UPCC (20)
4. 24/7 Patient Flow and Supports (17)

OVERALL Top Initiatives

(combined ranking based on timeline and priority scores)

1. Rural, Remote ED and Transportation (50)
2. 24/7 Patient Flow and Supports (49)
3. System Triggers and Response Strategies (49)
4. Triage Away from ED and Improved Integration with UPCC (46)

Summary of Initiative Priority

Transition to Discharge Support Unit

- Cohorting patients to enable rapid, supportive discharge planning

Physician at Triage / Second Look Program

- Senior ED physician to provide expedited triage
- Peer review of decision to admit; Island Health Second Look program
- Consultative support for LTC teams considering transfer of a patient to the ED

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1. Congestive Heart Failure - Target Patient Group
    - Additional data analysis underway
    - Cardiologists working on CHF through Cardiac BC to bring suggestions to Task Group

2. Mental Health and Housing

3. Long Term Care Policy Barriers
    s.13

4. Further Collaboration on HHR strategies
    - Formalized communication pathway to Provincial Health Human Resources Coordination Centre

5. Urgent and Primary Care

Next Steps

- Creation of Sub-Working Groups focused on:
  - Transition to Discharge Support Unit
    - Requires connection to Home and Community Care
  - Physician at Triage / Second Look
    - Development of preliminary project documents
- Ministry to continue to work on policy issues
- Next meeting October 27

Emergency Department & Hospital Capacity Task Group

October 13, 2022

RECORD of ACTIONS and/or DECISIONS

Attendees:

Ministry of Health

Kristy Anderson (Chair), ADM, Hospital & Provincial Health Services
Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation
Leah Smith, A/Executive Director, Hospital Services Branch
Leann Cairns, Director, Hospital Services Branch
Donna Wilkinson, Manager, Acute Care Policy and Decision
Leslie Halston, Program Analyst, Secretariat

Doctors of BC

Dr. Quynh Doan, Co-President, Section of Emergency Medicine
Dr. Gord McInnes, Co-President, Section of Emergency Medicine
Dr. Steve Fedder, Co-President, Section of Emergency Medicine
Dr. Sam Bugis, VP Physician Affairs & Specialist Practice

Health Authorities

VIHA: Marko Peljhan, VP Pandemic Planning, Interim VP Clinical Operations South Island, Cowichan Valley
VIHA: Dr. Tracey Stephenson, Medical Director, Acute Flow & Utilization

FHA: Dermot Kelly, VP Community Hospitals and Health Services

NHA: Dr. Patrick Rowe, Medical Lead Northern Health Emergency Room and Trauma Services

IHA: Richard Harding, Executive Director North Okanagan
IHA: Dr. Aron Zuidhof, ED Physician, Medical Director, Emergency Network

VCH: Michelle de Moor, VP Vancouver Acute Services -
VCH: Dr. Hussein Kanji, Provincial Lead & Chair, Critical Care Medicine BCPSQC & CCSEC, Senior Medical Director, Health Emergency Management BC (HEMBC)
VCH: Lori Korchinski, Regional Director Emergency & Trauma Programs

PHC: Cindy Elliott, Program Director, Emergency and Access Services
PHC: Norm Peters, Chief Operating Officer
PHSA: Sarah Bell, Chief Operating Officer, BC Children's Hospital
PHSA: Dr. Garth Meckler, PHSA, Associate Professor Pediatrics and Emergency Medicine, University of British Columbia, Division Head, Pediatric Emergency Medicine BC Children's Hospital

BCEHS: Dr. Leanne Heppell, Executive VP BC Emergency Health Services
BCEHS: Dr. Wilson Wan, Interim Chief Medical Officer

FNHA: Dr. Jeffery Beselt, Community Physician, Kwadacha and Tsay Keh Dene Nations and Emergency Physician, Campbell River

Regrets

VCH: Dr. Eric Grafstein, Regional Department Head Emergency VCH-PHC
PHSA: Susan Wannamaker, VP Clinical Service Delivery
IHA: Diane Shendruk, VP Clinical Operations, Interior Health North
IHA: Dr. Shallen Letwin, VP Clinical Operations, Interior Health
NHA: Penny Anguish, COO, Northern Interior Health Service Delivery Area
FHA: Laurie Leith, VP Regional Hospitals and Health Services
FHA: Dr. Craig Murray, ED physician, Surrey Memorial Hospital
FNHA: Gary Housty, A/Executive Director, OCNO

Emergency Department & Hospital Capacity Task Group

October 13, 2022

1. **Call to Order:**
   - Kristy Anderson, Chair, called the Task Group to order and called for additional agenda items.

2. **Review of Survey results and Confirm Initiatives**
   - Leah Smith provided a Power Point presentation review of the group's discussions and planning to date.
   - The results of the Initiative Prioritization Survey were provided and ratings of each discussed.
   - Top 2 priorities:
     1. Transition to Discharge Support Unit
        - Partnership with Seniors and Community Care Teams required
     2. Physician at Triage/Second Look Program
        - Sub-working groups will be stood up to support these high priority groups first
   - Four Additional Priorities emerged:
     1. Rural/Remote Ed and Transportation
     2. 24/7 Patient Flow and supports
     3. System Triggers and Response Strategies
     4. Triage away from ED and Improved Integration with UPCC
   - Noted that additional resources to be identified/required for the top priority working groups.
   - HA's LTC and ALC capacity plans are due to the Ministry October 19, 2022
   - Noted that MoH continues to work on policy issues

   Action/Decision: Leah Smith to share Power Point deck with task group.

   Action/Decision: Members to identify additional participants for Transition to Discharge Support Unit and Physician at Triage/Second Look Program working groups and provide these to Leah Smith by end of day Friday, Oct. 14, 2022.

3. **Sub-Working Groups**
   - Working group mandates, including membership and timelines were discussed.
   - Sub-Working groups are required to provide report back to this table with recommendations on proceeding with initiative.

   Action/Decision: Ministry will provide framework for the sub-working groups, including mandate, framework, and meeting frequency.

4. **Next Steps**
   - Discussed next steps for Task Group, including meeting frequency moving forward.
   - Next Meeting October 27, 2022

FW: Physician at Triage

From: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>
To: Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>
Cc: Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>
Sent: October 25, 2022 11:11:34 AM PDT
Attachments: Role of Physician at Triage.docx, Physician at Triage- Version 10.1 January 19, 2018.pptx, Physician at Triage Compensation.pdf, image002.png, image001.jpg, Results for Physician at Triage Survey.pdf, Final Physician at Triage Survey.pdf, Emergency Physician Lead.docx, Cost for KGH Physician at triage proof of concept.xlsx

Please save this under PAT as background material.

Thank you
Leann

From: Balfour, Dr. Nicholas <Nicholas.Balfour@interiorhealth.ca>
Sent: October 25, 2022 8:34 AM
To: Cairns, Leann HLTH:EX <Leann.Cairns@gov.bc.ca>
Subject: FW: Physician at Triage

Hello Leanne. Nice to hear from you. Attached are some older documents for the first trial that I helped organize along with Andrew Hughes who was KGH ED at the time.s.13
s.13
s.13 Then the pandemic hit. I will also send you my Sauder ppt on this concept.
Cheers

Dr. Nick Balfour
Executive Medical Director, Clinical Operations, IH South & Transport
Interior Health, Community Health & Services Centre

From: Hughes, Andrew
Sent: Thursday, October 06, 2022 9:33 AM
To: Ertel, Dr. Michael <Michael.Ertel@interiorhealth.ca>; Gord McInnes[s.22] 'Keith Hutchison' [s.22]
Cc: Hutchison, Dr. Keith <Keith.Hutchison@interiorhealth.ca>; Ring, Dr. Todd <Todd.Ring@interiorhealth.ca>; Hendrik Petrus Van Zyl, MD [External Email][s.22] Balfour, Dr. Nicholas <Nicholas.Balfour@interiorhealth.ca>; Harris, Dr. Devin <Devin.Harris@interiorhealth.ca>
Subject: RE: Physician at Triage

Interior Health
Every person matters

September 17, 2017

To: **KGH ED Staff**
From: **KGH ED Leadership**

Re: **Role of Physician at Triage (PAT)**

To have a standardized process for Physician at Triage

Roles and Responsibilities

- The primary responsibility of physician at triage (PAT) is to assist in patient triage destination decisions in the Department. Secondary responsibilities include initiating diagnostic testing and therapeutics as soon as possible; assessing patients brought by ambulance to assist in offload delays; assessing patients brought by RCMP; communicating directly with emergency department (ED) physicians to facilitate rapid patient care, and; assessing and discharging low acuity patients from triage, where appropriate.
- The priority is on higher acuity patients with the intent to Initiate therapeutic interventions as well as diagnostic and laboratory investigations as early as possible.
- The PAT works in collaboration with the nursing triage team as well as the PCC to help facilitate patient flow through the Department.
- The PAT will have the final say in patient destination but it is expected that the PAT will work collaboratively with both triage staff and receiving staff within the ED in determining this.

- PAT may request to shorten the triage process for simple single system presentations that do not require a full triage nurse evaluation including vital signs. This is to be documented on the PAT form as well as nursing form.
- PAT may initiate simple interventions in Triage that might negate the need for further assessment in the ED. These patients who are then discharged must register and create a medical record which is the responsibility of the triage MD to complete
- The PAT **should not be involved in** reassessment of patients once therapeutics initiated unless there are special circumstances such as access block and patient boarding in PAT work area

Physician Workflow

- At start of shift, liaise with triage team, identify and acknowledge support staff including clerk and or nurse attached to PAT
- Priority is to be present for ambulance arrivals and to assist in appropriate triage destination decisions as well as any interventions and diagnostics as required.
- Patients arriving with RCMP, MH and Youth mental health are next priority. Exceptions include patient requiring rapid stabilization by way of physical and chemical restraint.
- Final priority will be ambulatory patients who self present.
- PAT will remain at the ambulatory triage area. However, if float or main MD is otherwise occupied the PATs first responsibility is to new EMS arrivals.
- PAT will document on a standardized physician triage form. This includes a brief history , and orders which may include diagnostic testing and initial therapy. Minimal information includes time seen, PAT name and patient name. This is processed by a clerk at triage. The original blue form stays with the patient chart, which will either be generated by quick registration or standard registration

Interior Health
Physician at Triage Compensation Model
June 2018

New Service Coverage:

12 hours/day Physician located at Triage desk
2 x 6 hour scheduled physician shifts
Minimum schedule = weekend/STAT days during prototype Sept - Dec 2018
Ideal schedule = 7 days/week coverage
Prototype locations at both IH Tertiary Hospitals KGH & RIH

	Estimated Total Payment per Shift
MOH and HEABC supported Compensation Model:	
APSA rate for ED SP with FTE definition @ 1680 hours for 6 hour scheduled shift & allowing for 1 hour indirect care time after scheduled shift	s.13; s.17
Alternative Compensation Models explored with MOH and HEABC:	
Sessions billed for estimated portion of 6 hour scheduled shift where patients triaged by PAT were treated by regular ED physician & 1 hour indirect care post-shift, FFS billed for all patients triaged and treated by PAT physician (Compensation model used for 1st trial weekend at KGH in 2017)	
APSA rate for ED SP billed for estimated portion of 6 hour scheduled shift where patients triaged by PAT were treated by regular ED physician & 1 hour indirect care post-shift, FFS billed for all patients triaged and treated by PAT physician (Compensation model used for other trial weekends at KGH in 2017)	
Discounted APSA rate for ED SP billed for estimated portion of 6 hour scheduled shift where patients triaged by PAT were treated by regular ED physician & 1 hour indirect care post-shift, FFS billed for all patients triaged and treated by PAT physician	
Current Compensation Models:	
RIH - APP Clinical Service Contract at APSA rate for ED SP with FTE definition @ 1340 direct hours + up to 340 indirect hours	$1,468
KGH - FFS with 10 types of scheduled shifts/day in Main ED, Minor Treatment, Streaming & Float areas where scheduled hours are 6-8 hours/shift and all shifts estimated total on-site time including indirect hours = 8 hours (analysis of ED shift billing comparisons completed by MOH in May/18 using actual FFS billing data)	Lowest = $1,170 Highest = $2,916 Average = $1,696

IH Proposed Compensation Models to be successful in obtaining PAT Coverage to offer new service:

Important to us to offer the same compensation model to both sites to ensure payment is equal for new service, option would be to provide both choices to each site to select best fit with their current ED compensation model

s.13; s.17

APP Clinical Service Contract at APSA rate for ED SP - same as RIH current ED contract FTE definition with payment for 6 hours scheduled coverage + 1 hour indirect care post-shift

Contract Stipend at APSA rate for ED SP with FTE definition @ 1680 hours for 6 hours scheduled coverage + FFS billed for all patients triaged and treated by PAT physician

Summary prepared by Gina Sloan, Corporate Director Medical Affairs, Interior Health

Based on engagement with and data provided by:

Liana Silver, Senior Manager Compensation Policy & Programs Branch, Ministry of Health
Chris Kincaid, HEABC

PHYSICIAN AT TRIAGE–SURVEY RESULTS

Kelowna General Hospital – Emergency Department

Abstract

A survey was conducted over a 2-week period to support the case to have a Physician at triage in the ED. This survey was offered to all staff in the ED of Kelowna General Hospital after a recent trial of having a Physician at triage during the Easter weekend 2017

Dorrie Fasick

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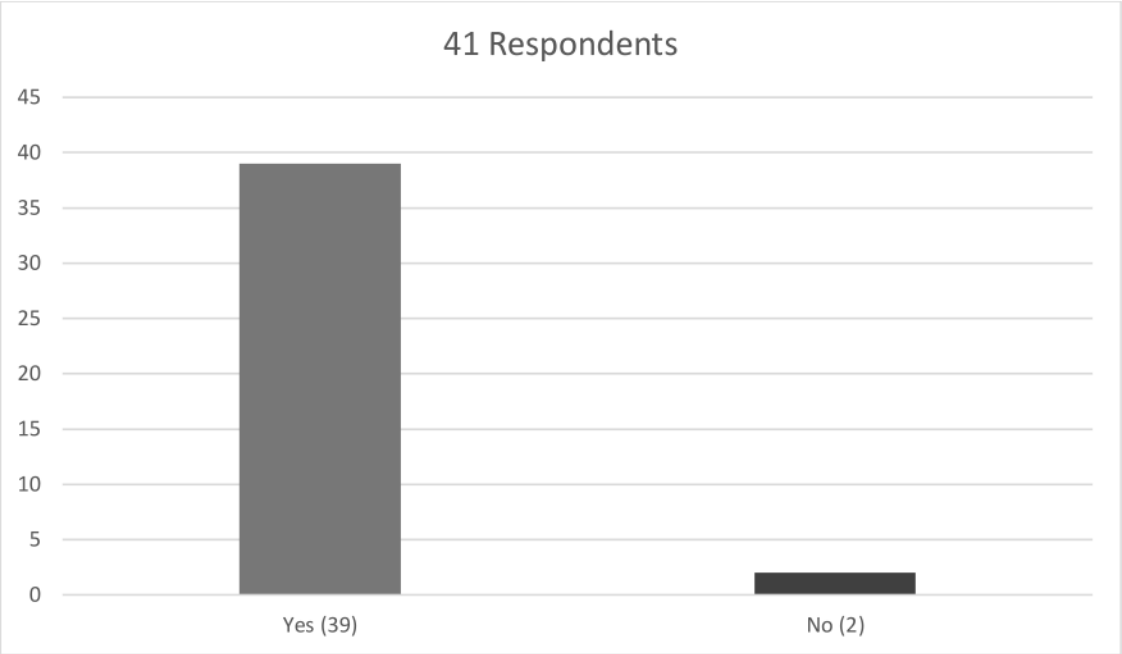
Findings for Physician at Triage Survey May 2017
Kelowna General Hospital Emergency Department

1. Do you feel that the 'Physician at Triage' improved flow within the department?

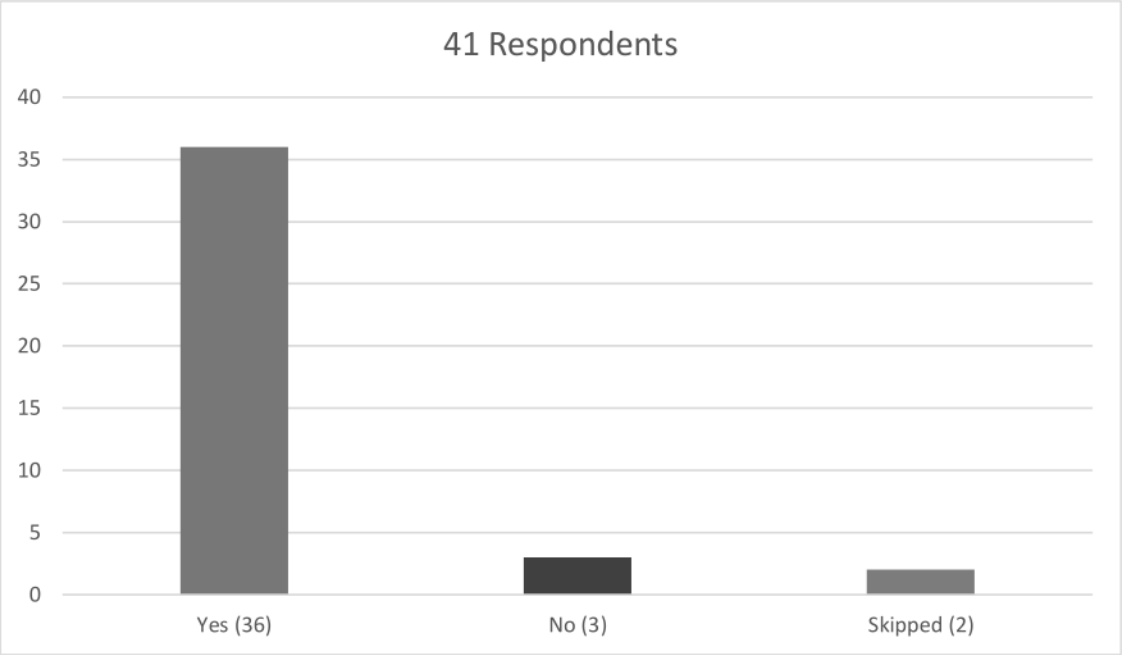


1. Yes and no, I feel that some physicians stuck to one role/area, where as others were all over the place. This made it difficult to keep track of orders, important interventions, etc...
2. Investigations completed faster facilitating DC time
3. Discharge from triage; faster time to lab, DI; better communication between MD's; appropriate triage zones
4. Right patient to right area. Tests and treatments ordered. Patients offloaded from BCAS stretchers to streaming chairs.
5. Got orders going that are outside NIBDOS. Getting patients discharged from BCAS instead of sending them to a department. Patients were sent to departments, ie. MT and STR that otherwise would not have been accepted as there was Dr-Dr conversations.
6. seen and discharged by the triage physician - no need to come in to the ED
7. My experience with the physician in triage was when I was working in streaming, I found that the x-rays, and blood work were done before the streaming MD seen the patient, which meant we moved into treatment more quickly, or that the pt was d/c'd faster. I also noted that fewer add on lab tests were ordered when compared to when the NIBDOS is utilized.
8. yes, it did. but it also congested the unit clerk in streaming.
9. Streaming patients felt their needs (nausea, pain) were addressed, gave streaming RN more ability to help as pts waited for Streaming ERP
10. I was Triage 1 during the trial and 1--tests and treatments were started at triage which lessens time spent in ER. 2. A few patients were able to be assessed, treated and discharged all from Triage. 3. Improved allocation of patients within the ER department
11. with streaming on pause it was good to be able to have a physician see a pt that presented with some concerning symptoms in a timely manor

12. Many patients were taken care of at triage no longer requiring placement in the ER The ERP decided where the patient should go and the ERP receiving was more accepting as it was the physician that decided
13. It seemed like there were fewer instances of BCAS crews holding patients in the hallways. Being able to expedite imaging tests for patients likely improved flow.
14. It was handy to get orders in right away for earlier reassessment with results
15. Diagnostics had already been ordered thus reducing wait times, urine cups provided etc. It definitely helped the flow in streaming a lot.
16. Some patients were discharged right from triage
17. No BCAS Offload Delays.
18. ABSOLUTELY! Patients were seen in a timely fashion (within CTAS score time frame) and allocated to appropriate area.
19. I worked in minor treatment and did not perceive any improvement. Patients came to minor treatment "diagnosed" for the most part, but still needed to wait to be seen by physician and treated. So from MT perspective seemed redundant and waste of resources. Triage RN is capable of those triaging those patients -at far lower cost than physician.
20. Pt's were getting "expanded NIBDOS" most test were pre ordered b/4 pt even got to the area they were heading to. eliminating the "wit to get in then get tests done" PaT several times dealt with small issue on own, a couple of med requests, request for blood work, MOST M2 pt from a total care facility was assessed post fall and sent back within an hour. Pt's who "re-presented' were deferred to clinic. One pt came in with s.22 at desk. Very minor complaint that would have elicited an "Are you sure this needs to be seen here?" question from me. s.22 asked re-complaint "So that's it, any other complaints." To which Pt replied "Well I wanted to see a doctor!" s.22 "You're in luck! I AM a doctor. You're going to be fine. Have an excellent day." aaaaand we're done! Between the tree PaT's I worked with at triage saw at least 12 Triage D/C home moments.
21. Improved flow as long as the Dr did not delay the registration process. Awesome to triage together. Was some incidences where there was a delay of registration
22. 10 month old in dire need moved from triage to trauma in under 3 mins, numerous patients sent home directly from triage with short assessment and guidance, less add on labs in streaming required and hence less time in dept
23. Ability to assess, treat and discharge from triage. Also tests being ordered such as xrays expedites patient flow through department
24. pediatric appendicitis case. got ultrasound and to OR in a very timely fashion. also avoided missing the ultrasound technician's scheduled time.
25. Flawless, I have never experienced such satisfaction at triage
26. 1. First contact at triage and discharging/ bringing in the pts when required. 2. Ordering imaging, labs when no rooms available or on hold. 3. Communicating with facilities when pt needs not to be in the hospital or discharged.
27. I think having the ERP assess at triage slowed the quick triage of the other patients. Perhaps if they were to remove them from the triage desk for assessment that would help but in general if slowed the triaging process
28. During my shifts (I worked 3), not once did we have patients in the hallway, or did we hold a BCAS crew because of congestion. I'm not sure what the average was, but I heard s.22 sent home 10/33 patients from triage. That's significant and talk about improving flow. You should have seen the happy faces of the nurses, on a long weekend ta boot! For preparing for what I thought was going to be a marathon weekend of shifts, I actually went home not feeling gassed.

29. Simply having imaging ordered at triage alone, saved a huge amount of time that patients would have spent waiting to be seen, having imaging ordered and performed and then being reassessed.

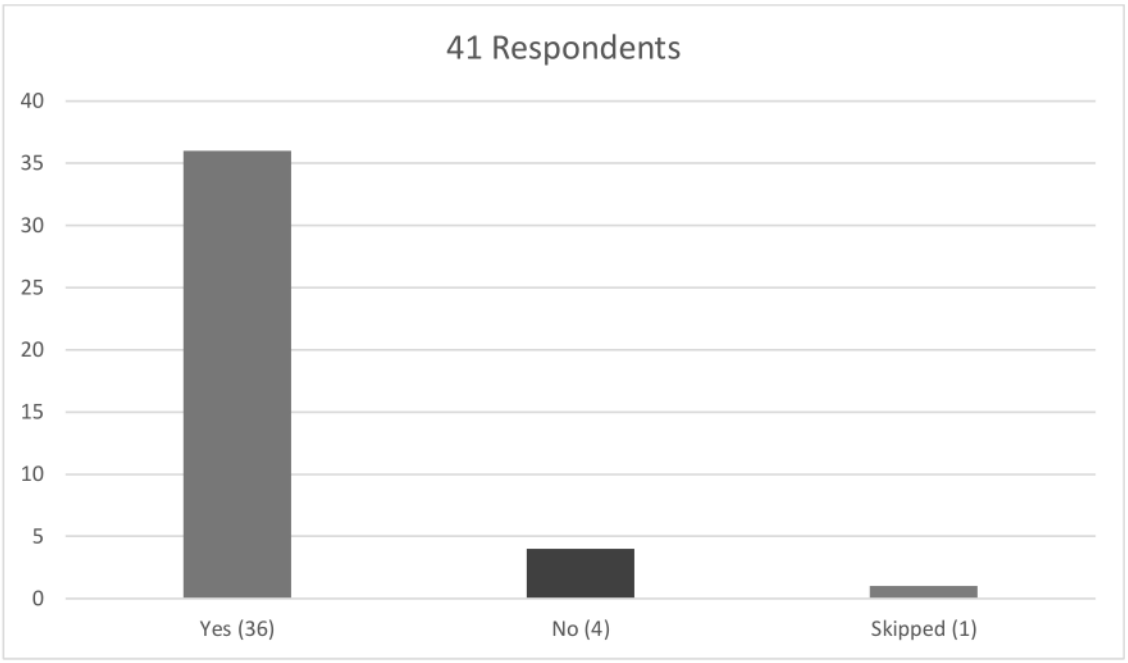
2. Do you feel the 'Physician at Triage' increased the quality of care in the department?



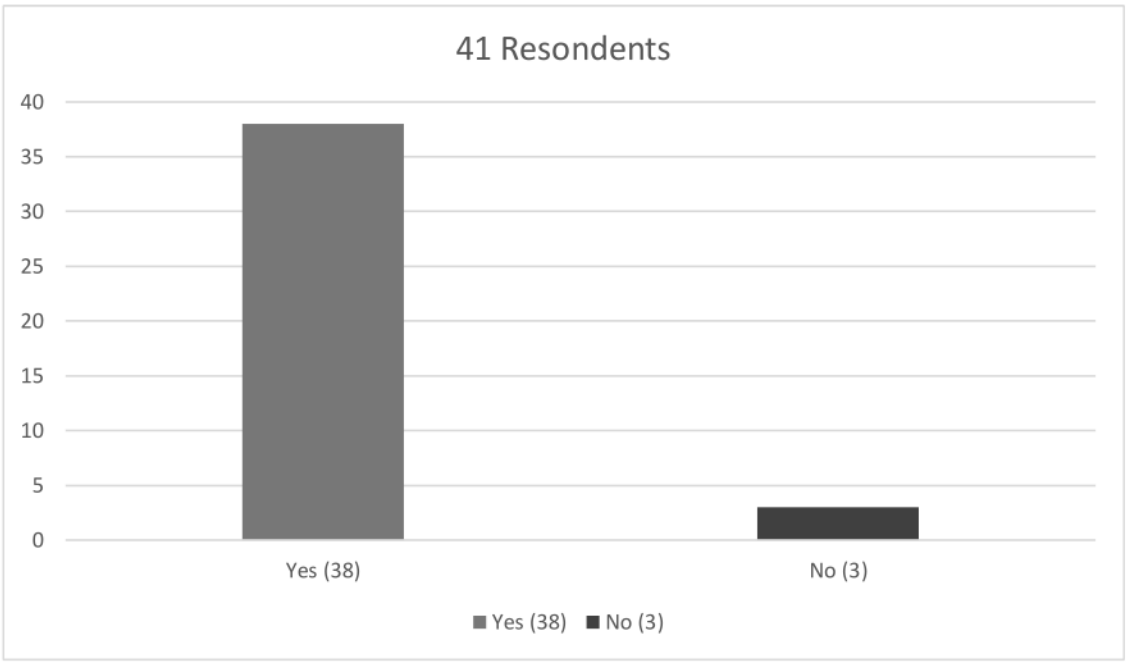
1. Helps provide early interventions, testing, and treatments.
2. As above
3. As above. Also the extra set of medical eyes picked up sick patients sooner
4. Care was started at triage vs waiting until a Dr could see them.
5. quicker to receive treatment
6. patient were seen more efficiently and test were ordered quicker.
7. Definitely as patients reported feeling more cared about and cared for by seeing a Dr at Triage. Were pleasantly surprised by being able to be discharged quickly. Assessments and treatments by nurse and Dr team complimented and enhanced care. Also see above question and answers
8. see above
9. Decreased waiting times, patients able to get diagnostics more quickly
10. Numerous examples of sick patients being recognized earlier.
11. I believe we always try to give our best quality of care
12. Patients weren't waiting for hours to have a test ordered, and then waiting again to have the results reviewed. In streaming they were able to get their lab work, DI testing and anything else necessary for a diagnosis much more rapidly and I think it helped patients feel like their care was important to us.
13. I am not sure that the quality of care was improved but certainly improved timely access to quality care.

14. With a caveat-- it was NOT busy so that helped as this was really labour-intensive--- lots of running back and forth, refining process-- but that will get ironed out if this goes ahead. Good for patients-- hard for nurses-- worked because of the low-flow. In busier times, it will slow things down as the whole focus of triage is the 90second assessment and disposition. Lots of double-steps-- might work better to have this physician located somewhere that the pt can be sent to for either a quick look and discharge or as a complicated patient they can get their workup started-- but we need to remember all the steps that need to take place-- registration is a huge piece and it's a bit muddy with this. Our physical layout is not good for this process, nor is our signage. The concept is good, but we will need some changes for process and safety.
15. Reduction of door to seen by physician. Explanations made up front in triage as to what there care was going to include.
16. ABSOLUTELY! Patients were able to receive pain management much quicker than usual.
17. It wasn't apparent from an RN perspective. I also worked in main during the trial and the process and care was the same as without a physician at triage. Money would be better spent on adding RN positions to improve quality of care, as much research has shown. Maybe another float doctor who could go to triage/ BCAS as needed.
18. Like I said. testing was happening faster, able to tell who is truly sick and get those people to the right place quicker. A pt was de-collared at triage assessment. and cleared. Hip x-ray ordered when pt arrived (BCAS actually took them down and back for us. Never once had a pt, who need to be in SOMEWHERE returned b/c they "weren't appropriate for the area even though MD in that area would have normally "kicked Pt back to WR" until "a more appropriate locatin became available.
19. Increased the speed in which some of the patients went through the department. If a patient requires the main department and a bed available should be no delay in putting them in. As for deciding where a patient should be placed 99.9% of the time nurses know where patient should be.
20. Ordering the right tests st I he right time and at times not offering work up that could be carried out in community
21. Absolutely, it felt like private healthcare, time to physician minus 5 minutes!
22. No difference
23. Decreased wait times, faster throughput to getting diagnostics completed and decreased congestion as a whole.

3. Would you like to see the 'Physician at Triage' made into a permanent role?



4. Did you work any shifts during the 'Physician at Triage' trial?



5. Overall, how did this role improve working conditions in the Emergency Department over the trial period?

1. I think it has the potential to work well. However, I feel that the physician's role at triage needs to be consistent and standardized more so that we can work appropriately with them and implement the orders in a timely manner.
2. more comradery. better patient satisfaction
3. Fantastic collaborative experience
4. Good team building. We all problem solved together.
5. More focused care. Flow to departments improved as pts weren't bumped back to triage. Orders started and some pts d/ced from Triage. There must be a nurse to go with the physician AND a unit clerk should also be positioned at triage!!
6. Tests /studies (ct, us etc.) were ordered earlier thus patients theoretically could have their tests done more quickly- this worked when the department such as streaming was not overloaded with too many patients since ct and us needed to keep up with the increased numbers of orders in a shorter period of time. Having an ERP always available in triage was helpful also in discussing certain cases and deciding as a team how to approach their care most efficiently.
7. no ambulance delays teamwork happy patients seen and treated quicker
8. Pt's moved through streaming at a faster pace
9. except for the congestion in streaming and increased workload for the clerk left, this was a definite improvement. Need to improve the ordering sheet
10. Good flow. I feel like they should not be side by side RN - perhaps they see the ERP post registration unless hot stroke/ Resus in ecg room/second triage area before moving on. on busy days Triage ERP cant be at both front and back door at the same time, can delay line up waiting for triage ERP- need protocol/ to test this on higher volume days
11. increased flow, decreased volume in ED, decreased wait times for patients
12. worked well over every passing day! Difficult to triage pt when doctor also assessing at the same time. Also issues with charts being missed/lost/misplaced due to pt not being registered before treatment by MD. Over all amazing concept and just needs a few tweaks!
13. Improved Team dynamics, Improved patient care. Improved patient satisfaction. Improved patient movement through ER
14. it was nice to know that when a concerning pt presented we were able to have them seen promptly and labs, xray and other diagnostics order
15. Was great to have the learning opportunity to work along side the physicians. Unfortunately was unable to see it function during a more busier period.
16. Sense of departmental morale has never been better!
17. I don't think it is necessary with the float Dr, however I only worked 1 day of this rotation
18. Improved staff and patient morale, expedited wait times, and improved patient care and satisfaction.
19. Improved physician to initial patient assessment times.
20. I'm not sure it did-- we introduce change in this department in such a rushed, not-thought-out way that it's hard to evaluate it's efficacy. There are not posted goals, so what are we evaluating anyway? A 'sense' of how it was? A 'feeling'? Because without some kind of measurement tool, this was just a lovely way to spend a weekend with some nice people.

21. Yes - nurses/physicians worked in tandem to reduce time in the ED causing less of a log jam and quicker turn around. Overall patient satisfaction seemed greater.
22. I felt like patients length of stay in dept was shortened. Also fabulous for patients with minor complaints to be discharged at triage. Having the physician at triage also helped to alleviated tremendous stress for triage nurses who have acutely ill patients in their care.
23. I saw no difference at all.
24. Yes, the flow was increased. CTAS 6 and a few 5's were sent home so they didn't up other resources. Hearing "You deal with this all the time." was very gratifying, then being able to explain "and I can't just say {Hmm thanks for sharing that story, Well you're good to go, have a nice day!}". Granted not the highest volumes ever, but it made a difference, 10 pts vetted at the door is over 1hr of time freed up for the streaming / MT Doc who would have t deal with that otherwise.
25. patients were seen faster; specific diagnostics were ordered quickly; some patients were even discharged directly....all resulting in improved patient satisfaction & improved flow/less congestion in the ED
26. Some straightforward patients were discharged at triage right after registration
27. Nursing staff felt less stressed, more supported, emphasized team. Good for docs to see some of those unfortunate patients left in main waiting room staring at triage with a puke bucket when units on hold
28. Improved flow
29. Investigations ordered, analgesia/antiemetics started in a way more timely fashion.
30. Improved care to the patient, workload for the nurse, release bcas rapidly, reduced pain, lowered risk of missed CTAS diagnoses, discharged people home promptly and sometimes immediately!
31. It was beneficial to have the physician at triage as orders could be given immediately for xray, CT, extended labs and analgesics. For those who has very simple complaints they were also able to be discharged immediately from triage. I do think it all depends on the Dr that is out there though. More were willing to partake in the triage process and others took more of a 'stand back and listen' role. I think perhaps more guidance around their role should be reiterated. Overall this was a great trial that should be continued.
32. yes
33. I believe it did not improve the working conditions .
34. Faster door to MD time. Quicker turn around times. Decanting a small number of patients from the front door to discharge.
35. I believe it to be a positive addition to our department. Many hospitals I have worked at incorporate a Physician at Triage during congested times. I truly hope this moves forward and KGH ED adopts this permanently. Staff moral and patient care would all benefit from having a Physician at the front door.
36. More physicians spreads out the work and makes it easier to be efficient.
37. Patient flow and wait times were much improved. Having worked only in streaming during the trial, I didn't see first hand how many patients were able to be seen and discharged appropriately without having to come in to the department but feedback from colleagues was that this played a Major role in alleviating department pressure also.

PHYSICIAN IN TRIAGE SUBWORKING GROUP

AGENDA

October 27, 2022, Noon – 1:00 p.m.

Click here to join the meeting

Or call in (audio only)

s.15; s.17

Meeting ID: s.15; s.17

Passcode:

Membership	
☐ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Sim Grewal, BC Children's Hospital ☐ Christy Hay, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Keith Hutchison, Interior Health ☐ Wilson Wan, BCEHS	**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat ☐ Joanne Shum, Project Lead

1 – Call to Order		**Lead**	**Attachments**
12:00 – 12:10 pm	Introductions and agenda review	**Leah Smith**	
2 – Defining the Work and Confirming Deliverables		**Lead**	**Attachments**
12:10 – 12:20	1. Defining the work. Did we get it right? 2. Deliverables to Task Group	**Leah Smith**	
3 – Information Sharing/Discussion		**Lead**	**Attachments**
12:20 – 12: 45	1. IHA: ED Physician Lead/Physician at Triage 2. Is this what we are trying to achieve, or an aspect of this?	**Dr. Nick Balfour & Dr. Keith Hutchinson**	
4 – Next Steps		**Lead**	**Attachments**
12:45 – 1:00	1. Identify work to be started and reported out next meeting. 2. Confirm meeting dates/frequency	**Leah Smith**	
Adjourn. Next Meeting – TBD, 2022			

PHYSICIAN @ TRIAGE OR PHYSICIAN-LED DECISION SUPPORT SUB-WORKING GROUP (TBC)

BACKGROUND/CONTEXT

The Emergency Department and Hospital Capacity Task Group (the Task Group) was created to support the rapid development of a provincially-coordinated approach focused on implementation of solutions to address capacity challenges facing emergency departments (ED) and hospitals.

The work of the Task Group includes rapid identification, development, and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.

Following a September 29th all-day meeting of the Task Group, physician at triage, peer review decision support and consultative support for LTC teams were identified as promising strategies that warranted further investigation. These three strategies have been grouped into what could be called the **Physician-Led Decision Support (non-computerized)** sub-working group.

PURPOSE

The Physician-Led Decision Support sub-working group (the SG) will further refine these identified strategies and develop initiative recommendations to be implemented by heath authorities for consideration of the Task Group. The initiatives should utilize a senior ED physician to: provide expedited triage, peer review/decision support to admit, and/or consultative support for LTC teams considering transfer of a resident to the ED.

OBJECTIVES

In developing the initiatives and recommendations, the SG will engage a whole-system perspective and identify:

- Whether and/or how to proceed with the initiatives for immediate implementation, and longer-term considerations to support province-wide health system transformation.
- Is implementation possible within the current health human resources context?
- Risks and mitigations to the risk/challenges and identified solutions
- Enablers for the initiatives and attributes to ensure agility (can be customized for site-specific implementation while still achieving desired outcome)
- Opportunities and benefits realized through implementing the model
- Key data/metrics to measure the impact and ongoing performance of the initiative.
- Financial implications

POTENTIAL INDICATORS/METRICS

- Improved emergency department throughput and efficiency
- Reduced hospital occupancy
- Reduced Length of Stay in the ED
- Reduced Left without being seen individuals
- Decrease in avoidable ED visits from LTC.

- Improved work environment for emergency department care providers.
- Improved patient experience

DEPENDANCIES

The following assumptions have been made:

- Expertise exists within the membership of the SG that can be leveraged.
- Ministry of Health will provide support and structure for the SG.

BARRIERS

The following constraints may apply:

- Budget
- Health system demands on member availability
- Deadlines for implementation

TIMELINE

A report back including recommendations will be provided to the Task Group by mid-November. The SG will complete its work through weekly meetings to be confirmed by the SG.

FOR CONSIDERATION/DISCUSSION

Below are aspects (benefits/barriers etc.) identified from material provided by SG members and/or scans which require SG confirmation/validation and additions to.

Questions:

- Would implementation of initiatives be a 24/7 model or only at peak times? What work needs to be done so that we can understand when PAT would be most effective?
- What resources are required for PAT? In the Kelowna model, is there a dedicated RN and UC at triage for PAT (that is above and beyond normal staffing levels at triage?)
- Where does the PAT, RN, and UC sit? Is there operational space (i.e. workstation, exam room, etc available to PAT team)?
    - Would it be possible to have a mobile triage station? Consider in the waiting room or in adjacent building?
    - Would it be possible to have virtual PAT? What opportunities are there with RTVS? For ordering labs and diagnostics, could it be nurse-initiated with the support of virtual PAT?
- Assigned physician responsibilities are important (slide 9). Curious about which one Kelowna's PAT spent the most time on (i.e. which one made the most difference and could it be extrapolated to other urban vs. rural sites?)
- Where would the initiatives have the most impact? Are there characteristics of a site to consider or avoid implementation?
- What considerations have been given to the unit clerk role to support PAT? Was the unit clerk dedicated to PAT? And did UC roles/responsibilities change to support PAT?

Senior ED Physician to Provide Expedited Triage/Physician at Triage (PAT)	
Benefits	**Barriers/Risks**
• Speedy redirection of patients that do not require the level of care provided in an ED, as well as faster admission of inpatients who require hospitalization • Triage protocols to start diagnostic orders, specimen collection, and treatment in order to take advantage of delays prior to bed placement. • The PAT is an innovative triage process • The PAT is flexible and adjusts its focus or use to meet fluctuating demands of the rest of the department • The PAT uses ongoing communication and needs assessment collaboration between ED MDs, triage RN , ED Charge Nurse , Unit Clerk and the entire PAT team • The PAT has the ability to treat any acuity of patient arriving to ED based on department needs, including those requiring IV medications, inpatient admissions and even stroke codes. However, it primarily functions as a quick-care hybrid unit within the ED Physician Role • Assist in patient triage destination decisions in the emergency department and initiate diagnostic testing and therapeutics as soon as possible • The priority is on higher acuity patients, and patients that arrive through BCAS and RCMP, and the initiation of therapeutic interventions as well as diagnostic and laboratory investigations as early as possible • PAT may initiate simple interventions in triage that might negate the need for further assessment in the ED. These patients who are then discharged must	• Most resource-intensive way to conduct triage, especially when used to triage of non-urgent patients. • Costs, compensation models • Availably of health human resources

register and create a medical record which is the responsibility of the PAT to complete • The PAT works in collaboration with the nursing triage team as well as the PCC to help facilitate patient flow through the Department	

Other Opportunities/Consideration:

- Potential benefits of Physician at Triage could also include direct effect on patient outcomes or impact on radiology or laboratory studies.

- Nurse triage and redirection of patients from the ED when they do not require emergent care but only when clear redirect criteria/protocols are in place to support what types of patients and clinical conditions are appropriate for redirection.
- Could also support a Clinical Decision Unit to be used only for patients requiring observation and specific services (e.g., GI bleed stabilization, chest pain, transfusion, dialysis, placement). This avoids hospitalization for these individuals.

Triage RN Support

- Performs rapid triage assessment with PAT
- Initial selective documentation of vital signs in consultation with PAT
- Order management with PAT for treatments/tests/labs/meds
- Performs treatments/medication administration for PAT patients
- Manages the patient flow within waiting room, PAT, and flow to other zones in Emergency Department

Goals of PAT

- Reduced time to Physician Initial Assessment (PIA) times
- Decrease in BCAS offload delays
- Reduced wait times and reduced ED length of stay
- Decrease in time to inpatient bed
- Decrease number of patients leaving without being seen
- Increase care provider satisfaction
- Increased patient satisfaction

Peer Review/Decision Support to Admit/"Second Look"

Benefits	Barriers/Risks
• Provides peer support and consideration of other appropriate pathways to access care (other than admission to the hospital), possibly increasing the appropriateness of care (right care, right place) • More standardized approach to decision to admit my reduce variation in ED physician	• ED physicians perceive the discharge decision for high-acuity patients most frequently as one based upon clinical judgement rather than evidence-based medicine.[i]

admitting practices as well as variation in risk tolerance.
• Decreased ED admissions through
  ○ Team-based care and better understanding of what's available to the patient
  ○ Identified community resources to support the patient's return to home
  ○ 2nd perspective on resource options
  ○ A shared language about what the patient needs	

	○ A number of issues and contributing factors need to be considered that may affect the ultimate disposition of a patient: ○ Access to follow-up health care ○ Ability to fill medication prescriptions ○ Level of functional independence or ability to ambulate ○ Ability of the patient to care for himself or herself at home (e.g., activities of daily living, dressing, bathing) ○ Family and social support network ○ Suspicion of child or elder abuse ○ Caregiver concern ○ Medication risks ○ Patient mobility ○ Mobility and O2 equipment ○ Access to needed specialty care ○ Housing ○ Transportation ○ Mental health supports ○ Physician Risk Tolerance ○ Community Support Resources ○ Complex care needs
Consultative Support for LTC Teams Considering Transfer of a Patient to the ED	
Benefits	**Barriers/Risks**
• Increase decision-making supports / advice available to LTC team when considering transfer to the ED, especially overnight when fewer staff are available in LTC home	•

[i] https://emj.bmj.com/content/32/1/9

PHYSICIAN IN TRIAGE SUBWORKING GROUP

AGENDA

October 27, 2022, Noon – 1:00 p.m.

Click here to join the meeting

Or call in (audio only)
s.15; s.17

Meeting ID: s.15; s.17

Membership			
☐ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Sim Grewal, BC Children's Hospital ☐ Christy Hay, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Christine Hall, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Keith Hutchison, Interior Health ☐ Dr. Wilson Wan, BCEHS		**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat **Provincial Health Services Authority** ☐ Joanne Shum, Project Lead	
1 – Call to Order		**Lead**	**Attachments**
12:00 – 12:15	Introductions, agenda review, level-set	**Leah Smith**	
2 – Information Sharing/Discussion		**Lead**	**Attachments**
12:15 – 12:30	1. IHA: ED Physician Lead/Physician at Triage 2. Is this what we are trying to achieve, or an aspect of this?	**Dr. Nick Balfour & Dr. Keith Hutchison**	Emergency Physician Lead.docx Role of Physician at Triage.docx Physician at Triage-Version 10.1 January
3 – Defining the Work and Confirming Deliverables		**Lead**	**Attachments**
12:30 – 12: 50	1. Defining the work. Did we get it right? 2. Deliverables to Task Group	**Leah Smith**	Physician@Triage Sub Working Group V
– Next Steps		**Lead**	**Attachments**
12:50 – 1:00	1. Identify work to be started and reported out next meeting. 2. Confirm meeting dates/frequency	**Leah Smith**	
Adjourn. Next Meeting – TBD, 2022			

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Withheld pursuant to/removed as

s.13

PHYSICIAN IN TRIAGE SUBWORKING GROUP

AGENDA

October 27, 2022, Noon – 1:00 p.m.

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1 – Call to Order		**Lead**	**Attachments**
12:00 – 12:15	Introductions, agenda review, level-set **Tracey** – there were a lot of ideas around patient flow. Are we only looking at PAT? **Manpreet**- if we can get really clear on what we are trying to achieve? What is the problem statement? Do we want to increase timely response to CTAS 1 -3? Or is it for all patients? Is it about moving admitted patients? Is it avoidable admissions? Strategy may look different by site.	**Leah Smith**	
2 – Information Sharing/Discussion		**Lead**	**Attachments**
12:15 – 12:30	1. IHA: ED Physician Lead/Physician at Triage 2. Is this what we are trying to achieve, or an aspect of this? Nick – sent project charter to Leah. s.13	**Dr. Nick Balfour & Dr. Keith Hutchinson**	

	s.13 Kamloops model (Keith) s.13 Dan Kalla (SPH) s.13		

	s.13 Tracey s.13 Garth s.13 Keith s.13 Tracey - s.13 . My 2cents		
3 – Defining the Work and Confirming Deliverables		**Lead**	**Attachments**
12:30 – 12: 50	1. Defining the work. Did we get it right? 2. Deliverables to Task Group **Joanne's thoughts:**	**Leah Smith**	

	s.13		
	Donna's Thoughts s.13		
– Next Steps		**Lead**	**Attachments**
12:50 – 1:00	1. Identify work to be started and reported out next meeting. 2. Confirm meeting dates/frequency Action Item Review • Provide summary of 'What We Heard Today' to SG • SG to provide MoH with questions they have about the work • SG to provide MoH with suggestions for how to move the work forward	**Leah Smith**	
Adjourn. Next Meeting – TBD, 2022			

CHAT

Manpreet Khaira (Guest)12:16 p.m.
s.13

Balfour, Dr. Nicholas12:55 p.m.
s.13

PHYSICIAN IN TRIAGE SUBWORKING GROUP

AGENDA

October 27, 2022, Noon – 1:00 p.m.

Tracey Stephenson (Guest)12:58 p.m.

s.13

s.13

My 2cents

Balfour, Dr. Nicholas12:59 p.m.

s.13

Manpreet Khaira (Guest)12:59 p.m.

s.13

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s.13

Progress Update for the Emergency Department & Hospital Capacity Task Group, October 2022

Following the September 29th all-day meeting of the Emergency Department & Hospital Capacity Task Group, three promising strategies emerged that warranted further investigation by a sub-working group: physician at triage, emergency physician lead/expeditor and ED consultative support for LTC teams to avoid resident transport to ED.

The Physician at Triage Sub-Working Group (P@T SWG) membership includes representatives from health authorities, FNHA, Doctors of BC and BCEHS and the Ministry of Health. The P@T SWG mandate includes further analysis of the strategies to inform recommendations for consideration of the Task Group by mid-November.

In its analysis and development of recommendations, the P@T SWG will engage a whole-system perspective and identify:

- Whether and/or how to proceed with the initiatives for immediate implementation, and longer-term considerations to support province-wide health system transformation.
- Is implementation possible within the current health human resources context?
- Risks and mitigations and identified solutions.
- Enablers of the initiatives and attributes to ensure flexibility (can be customized for site-specific implementation while still achieving desired outcome).
- Opportunities and benefits realized through implementing the model.
- Key data/metrics to measure the impact and ongoing performance of the initiative.
- Financial implications.

Progress to date of the work the P@T SWG includes:

October 27, 2022 Meeting

- Dr. Nick Balfour, Kelowna General Hospital and Dr. Keith Hutchison, Royal Inland Hospital shared experience and outcomes of Physician @Triage and Emergency Physician Lead trials within their respective hospitals.
- Group discussion included: defining the work, identifying the potential models and deliverables, requirements for successful implementation of the initiatives, barriers and identify data requirements to measure impact if implemented.
- Consideration was also given to criteria for site determination for implementation.
- Project Lead brought on to assist with project planning and implementation - draft project plan in development.
- Weekly 1-to-2-hour meetings scheduled beginning November 4, 2022.

Further updates will be provided following the next meeting and as the work progresses.

Physician @Triage (P@T) Sub-Working Group

October 27, 2022

RECORD of ACTIONS and/or DECISIONS

Membership	
☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Keith Hutchinson, Interior Health ☐ Dr. Wilson Wan, BCEHS	**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat **Provincial Health Services Authority** ☐ Joanne Shum, Project Lead **Regrets** Dr. Gord McInnes, DoBC Section of Emergency Medicine Dr. Sim Grewal, BC Children's Hospital Christy Hay, BC Children's Hospital

1. Call to Order and Overview:

Leah Smith initiated introductions and provided an overview of the ED & Hospital Capacity Task Group which began meeting in September at the request of the Deputy Ministry of Health. The Task Group identified and prioritized action on several initiatives for further exploration, including implementation of a physician at triage program or hybrid 'physician expeditor / lead' program that created a more flexible role. The Task Group had also expressed interest in Island Health's Second Look pilot.

The expert subgroup was formed to support further exploration, scoping and development of recommendations related to a physician at triage or related initiative.

The sub-working group is invited to make recommendations to the Task Group regarding the appropriateness of implementation of physician at triage, physician lead, and/or second look program. If the sub-working group recommends implementation, it should also provide advice on, how to proceed, the identify risks, enablers, barriers, and preliminary implementation plans. The timeline to provide advice back to the Task Group is mid-November.

2. Information Sharing/Discussion - Dr. Nick Balfour & Dr. Keith Hutchison

Dr. Nick Balfour provided an overview of the Kelowna General Hospital P@T Trial. Please see attached.

Role of Physician at Triage.docx

Dr. Keith Hutchison provided an overview of the Kamloops Emergency Department Physician Leader Model. Please see attached.

Emergency Physician Lead.docx

HAs shared experiences of the model at other sites

- St. Paul's Hospital model similar but detached from RN and UC. No identified improvement of flow through ED
- Victoria General pilot: Flex Doctor/Flow Doctor with a broad scope of duties providing support to new ER doctors. Identified improvements in time to be seen and nurses experienced feeling of increased support
- Success requires support of dedicated RN and UC

ACTIONS: MoH requested that group members define what they feel is necessary to make these initiatives successful, including what resources are required. Also, to consider why this would not work/should not be implemented at certain sites. The feedback will go to the EDHC Task Group.

ACTIONS: MoH will provide a summary email of the discussions.

ACTIONS: Members are asked to forward any additional questions they have regarding the models and information required to determine.

ACTIONS: Members are asked to provide MoH any suggestions and information that could assist in identifying how to define the physician at triage / physician expeditor model going forward. KGH Project Charter will be shared among members.

Next Meeting: November 4, 2022, 2:30pm – 4:30pm. Agenda to follow.

Dear P@T Sub Working Group Members

During our October 27 meeting, two distinct approaches to the concept of Physician at Triage (P@T) emerged. It's understood that in some sites the P@T could also be the expeditor, while at other sites only one model would work**.** The two approaches are:

1. *Physician at Triage* – piloted at Kelowna General Hospital
    - Key functions:
        - to assist in patient triage destination decisions in the department, with a priority on higher acuity patients
        - initiate diagnostic, lab and therapeutics as soon as possible
        - assessing patients brought by ambulance to assist in offload delays
        - communicating directly with ED physicians to facilitate rapid patient care
        - assessing and discharging low acuity patients from triage, where appropriate
        - work in collaboration with the nursing triage team as well as the PCC to help facilitate patient flow through the department.
    - Requirements of Model:
        - Physical space (need to define how much. Assume it's an assessment space and workstation)
        - Experienced physician, dedicated unit clerk and RN
        - High ED volume (threshold needs to be defined)
        - Alternative compensation model from fee for service
    - Outcomes may include:
        - Improve Physician Initial Assessment times in the Emergency Department
        - Improve patient outcomes by improved physician initial assessment times on possible stroke, ST-Elevation Myocardial Infarction (STEMI), and sepsis patients
        - Improve access to health care by decreasing the number of patients left without being seen
        - Decreased BCAS offload delays
        - Improve patient experience and staff morale
2. *Expeditor in Emergency or Emergency Physician Lead*
    - Key functions of Emergency Physician Lead (EPL):
        - The EPL will be a physician in a leadership role working together with the PCC to help manage patient flow and support the physicians on shift in the emergency department
        - Primary contact for departmental issues for the triage nurse and PCC
        - Attend bed meeting with the PCC to better understand the overall bed availability in the hospital and to help the PCC advocate for transfer of admitted patients to the floor
        - Available to triage and to help with difficult triage decisions and ordering directed investigations when appropriate beyond the nurse initiated diagnostics, both for patients at triage and those waiting with BCAS
        - Take all referral phone calls from sending physicians (does this include from receiving physicians as well?)

ED and Hospital Capacity Sub-Working Group
Meeting Material and Questions for November 4, 2022, Working Group Meeting.

    - Provide support and advice to colleagues regarding outpatient resources that could potentially help avoid an admission (will be particularly valuable to locums and newer hires)
    - Provide support and advice to LTC to avoid unnecessary transports to ED.
    - Direct physician resources to zones requiring more support
    - Assist with consultant service issues-i.e., excessive time for patient to be seen, direct referrals that have had no investigations ordered, resolving MRP issues between two services
    - Assessing admitted patients with long stays in the department waiting for an inpatient bed (working with PCC and MRP)
    - Support repatriation of patients to other sites
- Requirements of Model
    - Senior ED physician
    - Physician buy-in
    - Funding models?
    - Is there a volume requirement?
    - Clearly outline who is MRP
    - Space?
- Outcomes may include:
    - Improved nursing support at triage
    - Improved access and flow by supporting decision-making within the Emergency
    - Decrease time to inpatient bed
    - Improve Physician Initial Assessment times in the Emergency Department
    - Improve efficiency, accuracy and timeliness of diagnostic testing requested at triage (lab and radiology)
    - Create cost savings by decreasing BCAS offload delays
    - Reduced LTC transport to ED.

To guide the work going forward, we ask that you provide us with feedback to the above and specific questions you may which can be explored at our November 4th meeting.

Your responses to the following questions will inform our discussion on Friday:

- **Is there a volume requirement? At what volume would you recommend P@T vs. Expeditor?**
- **Are these models best at Level 2 or 3 hospitals, etc.? Or could this work in rural/remote sites? Are there sites in your HA where you could see either of these models being implemented?**
- **What statistics/data do you need to decide on which hospital should apply for either model? Do you have access to this data?**
- **When could either model be implemented?**
- **What are the health human resource impacts implementing either of these models?**

This continued exploration and dialogue will support our framing and understanding of the two models and make recommendations regarding their potential implementation to the Task Group.

PHYSICIAN @ TRIAGE SUBWORKING GROUP

AGENDA

November 4, 2022, 2:30 – 4:30 p.m.

Click here to join the meeting

Meeting ID: s.15; s.17

Passcode s.15; s.17

Membership	
☐ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Sim Grewal, BC Children's Hospital ☐ Christy Hay, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Christine Hall, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Keith Hutchison, Interior Health ☐ Dr. Wilson Wan, BCEHS	**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat **Provincial Health Services Authority** ☐ Joanne Shum, Project Lead

1 – Call to Order		**Lead**	**Attachments**
2:30 - 2:45	Introductions, call for additional agenda items and review of Oct. 27, 2022 Record of Decision.	**Leah Smith**	Physician@ Triage Sub WG Record of Ac
2 – Exploration of Models/Discussion		**Lead**	**Attachments**
2:45 – 3:15	1. Explore and compare Physician @ Triage and Expediter in Emergency models		Pending
3 – Review of questions		**Lead**	**Attachments**
3:15 – 4:20	1. Review of questions – Model requirements, volume requirements, HHR, etc.	**Leah Smith**	Pending
4 – Next Steps		**Lead**	**Attachments**
4:20 - 4:30	1. Identify work to be started and reported out next meeting. 2. Confirm next meeting date	**Leah Smith**	
Adjourn. Next Meeting – TBD, 2022			

PHYSICIAN @ TRIAGE SUBWORKING GROUP

AGENDA

November 4, 2022, 2:30 – 4:00 p.m.

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1 – Call to Order		**Lead**	**Attachments**
2:30 - 2:45	• Introductions • Agenda review • Review of Oct. 27, 2022 Record of Decision	**Leah**	Physician@ Triage Sub WG Record of Ac
2 – Exploration of Models/Discussion		**Lead**	**Attachments**
2:45 – 3:45	Review draft proposals and explore questions • Physician @ Triage • Physician Expeditor or Lead Note: Some preliminary questions are included within attached project proposals; participants are encouraged to identify additional questions	**Leah**	22 11 01 Physician at Triage_draft for discus 22 11 01 Physician Expeditor_draft propo
4 – Next Steps		**Lead**	**Attachments**
3:45 - 4:00	1. Confirm actions and next steps 2. Confirm whether additional meetings are required	**Leah**	
Adjourn. Next Meeting – TBD, 2022			

Physician @Triage (P@T) Sub-Working Group

October 27, 2022

RECORD of ACTIONS and/or DECISIONS

Membership	
☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Keith Hutchinson, Interior Health ☐ Dr. Wilson Wan, BCEHS	**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat **Provincial Health Services Authority** ☐ Joanne Shum, Project Lead **Regrets** Dr. Gord McInnes, DoBC Section of Emergency Medicine Dr. Sim Grewal, BC Children's Hospital Christy Hay, BC Children's Hospital

1. Call to Order and Overview:

Leah Smith initiated introductions and provided an overview of the ED & Hospital Capacity Task Group which began meeting in September at the request of the Deputy Ministry of Health. The Task Group identified and prioritized action on several initiatives for further exploration, including implementation of a physician at triage program and/or 'physician expeditor / lead' program. The Task Group had also expressed interest in Island Health's Second Look pilot.

The sub-working group is invited to explore these initiatives and make recommendations to the Task Group regarding the appropriateness of implementation of physician at triage, physician expeditor / lead, and/or second look program. If the sub-working group recommends implementation, it should also provide advice on, how to proceed (i.e. eligible sites / implementation criteria), identify risks, enablers, barriers, and preliminary implementation plans. The timeline to provide advice back to the Task Group is mid-November.

2. Information Sharing/Discussion - Dr. Nick Balfour & Dr. Keith Hutchison

Dr. Nick Balfour provided an overview of the Kelowna General Hospital P@T Trial. Please see attached.

Role of Physician at Triage.docx

Dr. Keith Hutchison provided an overview of the Kamloops' Royal Inland Hospital Emergency Department Physician Lead Model. Please see attached.

Emergency Physician Lead.docx

HAs shared experiences of various model at other sites

- St. Paul's Hospital model did not include RN and UC which impacted effectiveness. No identified improvement of flow through ED
- Victoria General pilot: Flex Doctor with a broad scope of duties focused on patient flow and providing support to ER doctors. Identified improvements in time to be seen. Nurses reported feelings of increased support
- Ideal state to achieve the full potential of any of these models requires support of dedicated RN and UC which may not be possible at all sites given HHR constraints.
- Based on the discussion, it appeared that the two initiatives underway in Interior Health are separate, distinct initiatives.

ACTIONS: MoH requested that group members consider what is necessary to make these two initiatives successful, including what resources are required for effective implementation of a model.

ACTIONS: Members are asked to forward any additional questions to support defining the models to the Ministry Team and to advise on information required to determine feasibility in their health authority or at specific sites.

ACTIONS: MoH will provide a summary of the discussions and begin drafting project proposals.

ACTIONS: KGH Project Charter will be shared among members.

PAT Project Charter_16June2018_

Next Meeting: November 4, 2022, 2:30pm – 4:30pm. Agenda to follow.

Proposal - Physician at Triage Model

Objective:

Physician at Triage (PAT)— typically involves a physician or advanced practice provider conducting an initial screening examination and potentially initiating diagnostic testing and treatment at triage—has been proposed as one ED-controllable mechanism to reduce ED LOS.

Background / Current Situation:

Emergency department crowding is a critical threat to patient safety and contributes to reduced patient satisfaction and efficiency of care.[1,2] To further improve throughput and decrease patient LOS, some hospitals have implemented physician-at-triage models in which an emergency physician evaluates, triages, and at times initiates simple interventions in triage that might negate the need for further assessment in the ED. The physician at triage (PAT) model has been shown to decrease patient length of stay within the ED.[3]

Kelowna General Hospital successfully piloted a PAT model during peak hours over several long weekends. The following indicators were examined and all seven of these indicators were improved during the proof-of-concept trial period.

- Reduced PIA times
- Decreased in British Columbia Ambulance Service (BCAS) offload delays
- Reduced wait timed and ED lengths of stay
- Decrease in time to inpatient bed
- Decrease number of patients left without being seen
- Increase care provider satisfaction
- Increase patient satisfaction.

Kelowna General Hospital has put forward a compensation model for the Physician at Triage to the Ministry of Health as an alternative to fee-for-service.

Supporting information and/or data:

Physician at Triage models have been endorsed as one mechanism to mitigate ED crowding [2, 4, 5, 6] yet the peer-reviewed evidence regarding their impact is mixed [7, 8, 9]. However, hospitals can introduce organizational measures that would ensure its success. Learnings from Kelowna General Hospital highlight the need for:

- Dedicated nurse and unit clerk to support physician at triage. Assumption is that there are no vacancies with baseline staffing.
- Access to identified workstation access.
- Access to identified clinical space for physician or nursing assessments.
- Physician at triage is flexible and can adjust to meet fluctuating demands.
- Physician at triage has strong communication and collaboration skills.
- Clearly identified roles and responsibilities for each member of the PAT.

Suggested roles and responsibilities from Kelowna General Hospital pilot:

PAT - Emergency physician	PAT - nurse
• Assist in patient triage destination decisions in the emergency department and initiate diagnostic testing and therapeutics as soon as possible • The priority is on higher acuity patients with the intent to initiate therapeutic interventions and diagnostic and laboratory investigations as early as possible • Priority also given to BCAS and RCMP • The PAT works in collaboration with the nursing triage team and the PCC to help facilitate patient flow through the ED • PAT may initiate simple interventions in triage that may negate the need for further assessment in the ED. These patients who are then discharged must register and create a medical record which is the responsibility of the PAT to complete • The PAT should not be involved in reassessment of patients once therapeutics are initiated unless there are special circumstances such as access block and patient boarding in PAT work area	• Performs rapid triage assessment with PAT • Initial selective documentation of vital signs in consultation with PAT • Order management with PAT for treatments/tests/labs/meds • Performs treatments/medication administration for PAT patients • Manages the patient flow within waiting room, PAT, and flow to other zones in the ED

Financial Implications (example from RIH and KGH):

s.17

Recommendation: require more HA input

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HA questions for discussion on Friday:

- Is this the correct volume/threshold requirement?
- Does this model work in urban settings only? Could it be implemented in rural/remote areas? Are there sites in your HA where you could see this implemented?
- What data do you need to decide on which hospitals should apply for PAT?
- When could it be implemented?
- If implemented, are there health human resource impacts that should be considered?
- Space requirements?

References:

1. Franklin BJ, Li KY, Somand DM, Kocher KE, Kronick SL, Parekh VI, Goralnick E, Nix AT, Haas NL. Emergency department provider in triage: assessing site-specific rationale, operational feasibility, and financial impact. J Am Coll Emerg Physicians Open. 2021 May 24;2(3):e12450. doi: 10.1002/emp2.12450. PMID: 34085053; PMCID: PMC8144283.
2. Emergency Department Crowding: High-Impact Solutions. American College of Emergency Physicians; 2016. Accessed 31 October 2022. https://www.acep.org/globalassets/sites/acep/media/crowding/empc_crowding-ip_092016.pdf
3. Marshall, MD, J. R; Katzer, MD MBA, R.; Lotfipour, MD MPH, S.; Chakravarthy, MD MPH, B.; Shastry, MD, S.; Andrusaitis, J., et al. (2017). Use of Physician-in-Triage Model in the Management of Abdominal Pain in an Emergency Department Observation Unit. *Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health*, 18(2). http://dx.doi.org/10.5811/westjem.2016.10.32042 Retrieved from https://escholarship.org/uc/item/51j085df
4. PhysicianFirst Emergency Department Management Model: Decreases Walk-outs and Improves Patient Satisfaction. Accessed 31 October 2022. https://www.usacs.com/physicianfirst-program
5. Kindschuh, M.W. et al. 73 Reducing Door-to-Provider Time By Creating a Triage Liaison Physician Line in an Urban Emergency Department During the COVID-19 Pandemic. Annals of Emergency Medicine, Volume 78, Issue 2, S35 DOI: https://doi.org/10.1016/j.annemergmed.2021.07.075
6. Sember M, Donley C, Eggleston M. Implementation of a Provider in Triage and Its Effect on Left without Being Seen Rate at a Community Trauma Center. Open Access Emerg Med. 2021 Mar 29;13:137-141. doi: 10.2147/OAEM.S296001. PMID: 33824606; PMCID: PMC8018550.
7. Franklin, BJ, Li, KY, Somand, DM, et al. Emergency department provider in triage: assessing site-specific rationale, operational feasibility, and financial impact. JACEP Open. 2021; 2:e12450. https://doi.org/10.1002/emp2.12450
8. Parmer MPH, MSN, FNP- BC, R. (2020). Implementation of a Provider in Triage Program in a Level III Emergency Department. Accessed 31 October 2022. https://hsrc.himmelfarb.gwu.edu/son_dnp/60
9. Traub SJ, Bartley AC, Smith VD, Didehban R, Lipinski CA, Saghafian S. Physician in Triage Versus Rotational Patient Assignment. J Emerg Med. 2016 May;50(5):784-90. doi: 10.1016/j.jemermed.2015.11.036. Epub 2016 Jan 27. PMID: 26826767.

Proposal - Physician Expeditor in Emergency Department

Objective:

The physician expeditor or lead's primary role is to assist with patient throughput and flow. The use of an expeditor has been shown to decrease emergency department length of stay, elopements and ambulance diversions.

Background / Current Situation:

Most of the factors that contribute to ED crowding (ED census, consultant wait times, laboratory and radiograph turnaround times, and admission wait times) are beyond the direct control of the ED (physicians, nurses, and administration).[1] However, ED crowding can contribute to prolonged wait times and decrease in patient satisfaction. One mechanism to address these concerns is to have an individual whose primary role is to support the initiation of earlier patient care and by getting prompt discharge dispositions so the ED bed can be available for the next patient.

Several pilots have ben trialed in BC, and most recently in Kamloops and Victoria, which suggest that having a senior Emergency Physician to support decision-making and expediting diagnostic tests was helpful.

Royal Inland Hospital (Kamloops) introduced this role to support the growth and capacity of their triage nurses and to provide additional support and consults, sometimes referred to as a "second look", for physician colleagues. Early pilots have shown that this role demonstrated effectiveness especially in decreasing time to inpatient bed. Using a senior Emergency Physician has shown to reduce the burdens and frustrations of the emergency team allowing them to direct their time and energy to patient care.

Supporting information and/or data:

As we wait for technology to support patient encounters through asynchronous texts, e-visits, or chatbots, there is a need to expedite care safely today within the emergency departments. Paramedics [2,] nurses [3, 4, 5], radiology coordinators[6], and physicians [7, 8] have been explored for this role, with some hospitals focused on implementing dedicated discharge nurses [8, 9]. It is clear that this role supports patient flow. Learnings from Royal Inland Hospital pilot highlight the need for:

- Physician roles and responsibilities will be defined by the daily fluctuating demands (i.e. BCAS, Mental Health, support transfer to inpatient bed, etc).
- Physician has strong communication and leadership skills, can collaborate across the entire ED team and other hospital units.
- Emergency department welcomes this new role.

Suggested roles and responsibilities from Royal Inland Hospital pilot for senior Emergency Physician Lead:

- The EPL will be a physician in a leadership role working together with the PCC to help manage patient flow and support the physicians on shift in the emergency department
- Primary contact for departmental issues for the triage nurse and PCC

- Attend bed meeting with the PCC to understand the overall bed availability in the hospital and to help the PCC advocate for transfer of admitted patients to the floor
- Available to triage, help with difficult triage decisions and order directed investigations when appropriate and beyond the nurse-initiated diagnostics (both for patients at triage and those waiting with BCAS)
- Receive all referral phone calls from sending physicians
- Provide support and advice to colleagues regarding outpatient resources that could potentially help avoid an admission (will be particularly valuable to locums and newer hires who may be less familiar with local services)
- Provide support and advice to LTC to avoid unnecessary transports to ED
- Direct physician resources to zones requiring more support
- Assist with consultant service issues (i.e., excessive time for patient to be seen, direct referrals that have had no investigations ordered, resolving MRP issues between two services)
- Assessing admitted patients with long stays in the department waiting for an inpatient bed (working with PCC and MRP)
- Support repatriation of patients to other sites

Financial Implications (example)

Project Component	Component Cost
Physician Compensation *current estimate, negotiations ongoing	

Recommendation: require more HA input

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HA questions for Friday:

- Is this the correct volume/threshold requirement?
- Does this model work in urban settings only? How could it be implemented in rural/remote areas (ie. Would RTVS work)? Are there sites in your HA where you could see this implemented?
- What data do you need to decide on which hospitals should apply for Expeditor pilot? Does it have to be a Senior Emergency physician? Could it be done by senior paramedics, nurses, radiology coordinator?
- When could it be implemented (timeline)?
- If implemented, are there health human resource impacts that should be considered?

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Nov 4, 2022

+ Neil Balfour

+ Wilson Wan

This is the sub-working group – off shoot of a meeting that got started in September.

One bucket of work – physician at triage and expeditor role.

We were asked to come together to scope the initiative looks like – identify risks and barriers. And if we're suggesting models to be implemented, where can it be implemented and what will it achieve.

2 preliminary project proposals. Including questions that we want to dive into together. Is this something that you can see being implemented in your HA.

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Proposals:

Physician @ Triage – Kelowna model review

- Requires dedicated RN and UC.
- Are there other hospitals that should apply for this model?

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Physician @Triage (P@T) Sub-Working Group

November 4, 2022

RECORD of ACTIONS and/or DECISIONS

Membership	
☒ Dr. Garth Meckler, BC Children's Hospital ☒ Christy Hay, BC Children's Hospital ☒ Dr. Sim Grewal, BC Children's Hospital ☒ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☒ Dr. Tracey Stephenson, Island Health ☒ Manpreet Khaira, Island Health ☐ Dr. Dan Kalla, Providence Health ☒ Dr. Nicholas Balfour, Interior Health ☒ Jaymi Chernoff, Interior Health ☒ Dr. Keith Hutchison, Interior Health ☒ Dr. Wilson Wan, BCEHS	**Ministry of Health – Hospital and Provincial Health Services** ☒ Leah Smith, A/Executive Director, Chair ☒ Leann Cairns, A/Director ☒ Donna Wilkinson, A/Manager **Provincial Health Services Authority** ☒ Joanne Shum, Project Lead **Regrets** ☐ Leslie Halston, Secretariat

1. **Call to Order and Overview:**
   Leah Smith led the discussion and provided a short overview of the ED & Hospital Capacity Task Group and provided background information around the work that the P@T group will be focusing on, including identifying the scope of the initiative, identifying models for consideration and potential implementation.

2. **Exploration of Models /Discussion:**
   The group reviewed and discussed the draft proposals for Physician @ Triage and Physician Expeditor or Lead. Members discussed the possibility/potential of these initiatives being used within their HA.

22 11 01 Physician at Triage_draft for discus

22 11 01 Physician Expeditor_draft propo

- Based on the discussions, common themes included nursing workforce concerns, requirement for dedicated team including a RN and UC, bringing physicians back to ED opportunity, and ensuring the appropriate physicians are in the P@T roles.
- Threshold indicators (occupancy rate) for appropriate site inclusion were also discussed

Action: Leah Smith to share rapid review of best practices (LPN/RN Fast Track, etc) that provides information and an inventory of the programs and contact details.

Action: Keith to share reference documents for both roles with Leah.

Next Meeting: November 16, 2022, Agenda to follow.

PHYSICIAN @ TRIAGE SUBWORKING GROUP

AGENDA

November 16, 2022, 12:00 – 1:00 p.m.

Click here to join the meeting
Meeting ID: s.15; s.17
Passcode: s.15; s.17

Membership			
☐ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Sim Grewal, BC Children's Hospital ☐ Christy Hay, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Keith Hutchison, Interior Health ☐ Dr. Wilson Wan, BCEHS		**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat **Provincial Health Services Authority** ☐ Joanne Shum, Project Lead	
1 – Call to Order		**Lead**	**Attachments**
12:00 - 12:15	• Introductions • Agenda review • Review of Nov.4, 2022 Record of Decision	**Leah**	P@T Record of Actions Nov 4, 2022 D
2 – Final Review of Proposal		**Lead**	**Attachments**
12:15 – 12:45	Review draft proposal and discuss • Finalizing proposals • Discuss next steps	**Leah**	PENDING
4 – Next Steps		**Lead**	**Attachments**
12:45 - 1:00	1. Confirm actions and next steps 2. Confirm additional meetings if required	**Leah**	
Adjourn. Next Meeting – TBD, 2022			

PHYSICIAN @ TRIAGE SUBWORKING GROUP

AGENDA

November 16, 2022, 12:00 – 1:00 p.m.

Click here to join the meeting
Meeting ID: s.15; s.17
Passcode: s.15; s.17

Membership			
☐ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☐ Dr. Garth Meckler, BC Children's Hospital ☐ Dr. Sim Grewal, BC Children's Hospital ☐ Christy Hay, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Manpreet Khaira, Island Health ☐ Dr. Dan Kalla, Providence Health ☐ Dr. Nicholas Balfour, Interior Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Keith Hutchison, Interior Health ☐ Dr. Wilson Wan, BCEHS		**Ministry of Health – Hospital and Provincial Health Services** ☐ Leah Smith, A/Executive Director, Chair ☐ Leann Cairns, A/Director (regrets) ☐ Donna Wilkinson, A/Manager ☐ Leslie Halston, Secretariat **Provincial Health Services Authority** ☐ Joanne Shum, Project Lead	
1 – Call to Order		**Lead**	**Attachments**
12:00 - 12:10	• Agenda review • Review of Nov.4, 2022 Record of Decision - ATTACHED • Action item – Share ESAC Rapid Learning Review - ATTACHED	Leah	P@T Record of Actions Nov 4, 2022 D ESAC Rapid Learning Review Report - Final.
2 – Final Review of Proposal		**Lead**	**Attachments**
12:10 – 12:40	Review draft proposal and discuss • Finalizing proposals • Discuss next steps	Leah	Physician at Triage_draft for discus
Adjourn. Next Meeting – TBD, 2022			

Proposal for Discussion - Physician at Triage and Physician Lead

Background

Despite a decrease in demand for emergency department (ED) care in the early days of the COVID-19 pandemic, BC has seen a return to and, in many cases, has surpassed the pre-pandemic demand for ED care. Health human resource shortages are the primary challenge to meeting increased demand. At times, smaller community hospitals have scaled back services or temporarily diverted patients due to staffing challenges – putting more pressure on larger hospitals. Other strains include the fall and winter resurgence of respiratory illness.

Many factors that contribute to ED crowding (ED census, consultant wait times, laboratory and radiography turnaround times, and admission wait times) are beyond the direct control of the ED's physicians, nurses, and administration.[1] ED crowding also poses a risk to patient safety and prolonged wait times contribute to reduced patient satisfaction and efficiency of care.[1,2]

One ED-controllable mechanism to address these concerns is to have an individual provider or team whose primary role it is to support the initiation of earlier patient care and prompt discharge so that ED resources can be available for incoming patients. To improve throughput and decrease patient length of stay (LOS), some EDs, including several in BC, have explored a variety of Physician at Triage (PAT) or Physician Lead models with mixed results.[3]

Discussion

While there is a range of PAT models, the gold standard is a team-based approach that generally includes a physician (or nurse practitioner), nurse and unit clerk. To be most effective, the PAT team is staffed in addition to baseline ED staffing. Given current health human resource constraints, some EDs have integrated a senior Physician Lead in addition to their existing ED team. This physician lead takes on a broader, more flexible role in supporting triage, providing leadership and mentorship to the team, and supporting access and flow throughout the ED and hospital.

PAT typically involves a senior physician or advanced practice provider conducting an initial screening examination and, where appropriate initiating diagnostic testing and treatment at triage. The PAT may eliminate the need for a full nursing assessment and further ED care for some lower acuity (CTAS 4 and 5) patients and, in some cases, may appropriately connect patients with resources in the community (supporting triage away from the ED).

Some PAT models include a degree of role flexibility that enables the PAT and/or team to respond to changing departmental needs beyond triage (i.e., ambulance offloads, inpatient admissions, etc.). This is particularly the case where health human resource constraints limit hiring a full PAT team and instead rely on a senior physician, sometimes referred to as a 'Lead Physician' or 'Physician Expeditor'. For example, the Physician Lead may begin their shift focused on discharge and refocus on triage as patient arrivals and wait time for physician assessment increases.

Two recent examples of introduction variations on PAT in Interior Health are explored below.

Learnings from Interior Health

Kelowna General Hospital – Physician at Triage

Prior to the COVID-19 pandemic, Kelowna General Hospital successfully piloted PAT for several long weekends during peak hours (10:00-22:00). The following indicators were examined, and all seven improved during the proof-of-concept trial period.

1. Reduced physician initial assessment times
2. Decrease in British Columbia Ambulance Service (BCAS) offload delays
3. Reduced wait times and ED lengths of stay
4. Decrease in time to an inpatient bed
5. Decrease in number of patients left without being seen
6. Increased care provider satisfaction
7. Increased patient satisfaction.

Suggested clinical roles and responsibilities from Kelowna General Hospital:

Physician

- Assist in patient triage destination decisions in the ED
- The priority is on higher acuity patients, with the intent to initiate therapeutic interventions as well as diagnostic and laboratory investigations as early as possible
- Priority is also on handover from BCAS and police
- The PAT works in collaboration with the nursing triage team as well as the patient care coordinator (PCC) to help facilitate patient flow through the ED and hospital
- PAT may initiate simple interventions in triage that might negate the need for further assessment in the ED. Patients who are then discharged at triage must register and create a medical record which is the responsibility of the PAT to complete

Nurse

- Performs rapid triage assessment with PAT
- Initial selective documentation of vital signs in consultation with PAT
- Order management with PAT for treatments/tests/labs/meds
- Performs treatments/medication administration for PAT patients
- Manages the patient flow within the waiting room, PAT, and flow to other zones in ED
- The PAT should not be involved in the reassessment of patients once therapeutics are initiated unless there are special circumstances such as access block and patient boarding in PAT work area

Royal Inland Hospital – Physician Lead / Expeditor

Royal Inland Hospital (Kamloops) introduced an ED Physician Lead to assist with patient throughput and flow during a period of significant overcrowding and staffing challenges. Unlike the PAT model, the Physician Lead does not have additional supernumerary team members assisting with access and flow. While the lack of a supernumerary team has the potential to create bottlenecks, this challenge can be mitigated by ensuring flexibility in the role allowing the Physician Lead to shift their focus in response to changing departmental needs.

Royal Inland Hospital's Physician Lead provided increased triage support, a supportive "second look" for physician colleagues, and took on a leadership role in addressing access and flow challenges in the ED.

As a result, evaluation indicators showed decreased ED LOS, patient elopements, ambulance diversions, and time to an inpatient bed. In particular, staff reported feeling increased support when this role was introduced during an ED surge and period of significant staffing challenges.

Learnings from Royal Inland Hospital highlight the need for:

- Clearly defined physician roles and responsibilities to be driven by the daily fluctuating demands (i.e. BCAS, Mental Health, support transfer to an inpatient bed, etc)
- Recruitment of a physician with strong communication skills who can collaborate with the entire ED team and hospital colleagues
- The ED team sees the value of and welcomes this new role
- Similar to PAT, there is a requirement to have a strong understanding of the hospital and community resources and supportive recruitment criteria

Suggested Physician Lead role and responsibilities based on Royal Inland Hospital model include:

- Leadership role working together with the PCC to help manage patient flow and support the physicians on shift in the ED
- Primary contact for departmental issues for the triage nurse and PCC
- Attend bed meeting with the PCC to better understand the overall bed availability in the hospital and to help the PCC advocate for transfer of admitted patients from the ED
- Available to triage and to help with difficult triage decisions and ordering directed investigations when appropriate beyond the nurse-initiated diagnostics, both for patients at triage and those waiting with BCAS
- Take all referral phone calls from sending physicians and provide support and advice to long term care home teams to avoid unnecessary transports to ED
- Provide support and advice to colleagues regarding outpatient resources that could potentially help avoid an admission (particularly valuable to locums and newer hires)
- Direct physician resources to zones requiring more support
- Assist with consultant service issues-i.e., excessive time for patient to be seen, direct referrals that have had no investigations ordered, resolving MRP issues between two services
- Assessing admitted patients with long stays in the department waiting for an inpatient bed (working with PCC and MRP)
- Support repatriation of patients to other sites, including to smaller community hospitals

Key considerations and strategies to improve effectiveness

While some have endorsed PAT models as an ED-controllable mechanism to mitigate ED crowding [2, 4, 5, 6] the peer-reviewed evidence regarding their impact is mixed [7, 8, 9]. Some BC trials have noted improvements to wait times for CTAS 3, 4 and 5, but increases for higher acuity patients (CTAS 1 and 2). However, EDs can introduce measures to increase the effectiveness and efficiency of PAT and Physician Lead models, as evidenced by learnings from Kelowna General Hospital and Royal Inland Hospital. Strategies to increase the efficacy may include:

- A team-based approach includes hiring a dedicated nurse and unit clerk as part of the PAT model. Without a dedicated team, bottlenecks and workload pressures may result (i.e., more strain on existing triage nurses). Bottlenecks may be mitigated through increased flexibility and enabling the Physician Lead to shift their focus in response to changing departmental needs.

- Clearly identified roles and responsibilities are needed for each team member to ensure that program objectives are met, especially if the model includes the flexibility to address changing needs in the ED.
- Access to an identified workstation and specified clinical space for physician and nursing assessments. Space constraints may also limit the hiring of a full PAT team.
- The establishment of key recruitment criteria is critical, including:
    - Must be a collaborative leader with strong communication skills capable of providing leadership across the multidisciplinary ED team and other hospital areas.
    - To effectively triage away from the ED and appropriately connect patients with appropriate community supports, the PAT should have extensive knowledge of the community and hospital resources.
    - Respected among peers and able to provide supportive guidance to colleagues with ideally more than five years of ED experience.

The introduction of PAT is not meant to replace, but rather to add to the existing triage nurse model. To ensure the successful implementation of PAT, the ED must have base staffing in place and the PAT resources should be added as supernumerary (i.e., above baseline staffing). The most significant barrier to implementing a PAT model is health human resource availability, namely nursing vacancies or shortages in the ED. While there is openness to innovation and improvements in the ED, the limited health human resources available make the introduction of supernumerary resources complex in most EDs in BC during fall and winter 2022/23.

In addition to nursing shortages, several health authorities are experiencing challenges related to limited physician resources in the ED, making it difficult to introduce a Physician Lead role. While the introduction of a supernumerary team is ideal, as shown by Kelowna General Hospital, the introduction of a Physician Lead alone has demonstrated improvements in Royal Inland Hospital's ED throughput and the team's perception of the working environment during a prologued period of overcrowding and staffing shortages.

The successful recruitment and retention of physicians to these roles requires longer-term, possibly permanent funding (beyond the approach taken to providing supplemental COVID-19 funding which is generally time-limited). Additionally, it was noted that a longer recruitment timeline (beyond fall and winter 2022) would be required to successfully recruitment into a PAT or Physician Lead role at some hospitals. It may be possible to attract physicians to take on more ED shifts to perform these roles. However, consideration should be given to mitigating the risk of destabilizing other programs.

Recommendations

Based on the Sub-Working Group on Physician at Triage discussions, the introduction of PAT as a boarder strategy is not recognized as a viable way to support the fall and winter surge across BC EDs due to health human resource constraints. However, the experiences of Kelowna General and Royal Inland Hospitals demonstrate the potential value of introducing these models.

The sub-working group recognizes the importance of continuing to learn more about the PAT model. Ideally, the two Interior Health hospitals will proceed with longer-term pilots and further validate the model's potential. However, it is recognized that given the current health human resource challenge, it

is unlikely that a significant number of additional hospitals will be positioned to trial this model over the fall and winter period.

If hospitals beyond Kelowna General and Royal Inland Hospital have sufficient physician resources, they may wish to consider introduction of a Physician Lead as a strategy to support the surge over the fall and winter. The identification of sites should be health authority-led. Health authorities can identify whether health human resources exist, local site readiness and alignment between local challenges and perceived benefits in the near term. The sub-working group offered a list of potential sites to consider, listed in Appendix A.

References (TO BE UPDATED):

1. Franklin BJ, Li KY, Somand DM, Kocher KE, Kronick SL, Parekh VI, Goralnick E, Nix AT, Haas NL. Emergency department provider in triage: assessing site-specific rationale, operational feasibility, and financial impact. J Am Coll Emerg Physicians Open. 2021 May 24;2(3):e12450. doi: 10.1002/emp2.12450. PMID: 34085053; PMCID: PMC8144283.
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10. Traub SJ, Bartley AC, Smith VD, Didehban R, Lipinski CA, Saghafian S. Physician in Triage Versus Rotational Patient Assignment. J Emerg Med. 2016 May;50(5):784-90. doi: 10.1016/j.jemermed.2015.11.036. Epub 2016 Jan 27. PMID: 26826767.

Appendix A: List of potential hospitals for Physician at Triage or Physician Lead

Hospitals that meet the inclusion criteria suggested for PAT or Physician Lead, defined as:

- Hospitals with greater than 28,000 ED visits and,
- Current occupancy rate (base beds) + surg occupancy rate ≥100% and,
- Median ED patient wait time from triage to physician initial assessment >1.0 hours

Health Authority	Hospitals that meet inclusion criteria*

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*Data was pulled on October 28, 2022. This list assumes that there is sufficient baseline staffing for the emergency department to support implementation of supernumary resources and that focused attention is provided to inpatient discharge planning to permit greater throughput of patients.

Physician @Triage (P@T) Sub-Working Group

November 16, 2022

RECORD of ACTIONS and/or DECISIONS

Membership	
☒ Dr. Garth Meckler, BC Children's Hospital ☒ Dr. Gord McInnes, DoBC Section of Emergency Medicine ☒ Manpreet Khaira, Island Health ☒ Dr. Dan Kalla, Providence Health ☒ Dr. Nicholas Balfour, Interior Health ☒ Dr. Keith Hutchison, Interior Health	**Ministry of Health – Hospital and Provincial Health Services** ☒ Leah Smith, A/Executive Director, Chair ☒ Donna Wilkinson, A/Manager ☒ Leslie Halston, Secretariat **Provincial Health Services Authority** ☒ Joanne Shum, Project Lead **Regrets** ☐ Christy Hay, BC Children's Hospital ☐ Dr. Sim Grewal, BC Children's Hospital ☐ Dr. Tracey Stephenson, Island Health ☐ Jaymi Chernoff, Interior Health ☐ Dr. Wilson Wan, BCEHS ☐ Leann Cairns, A/Director

1. Call to Order and Action Item:

Leah Smith led the discussion with a short 'level-set' of the work that the P@T group has been focusing on, including identifying models for consideration and potential implementation.

The Emergency Services Advisory Committee (ESAC) Rapid Learning Review Report, which outlined promising initiatives and priorities for the pandemic response, was also shared to members.

2. Final review of Proposal/Discussion:

The group reviewed and discussed the DRAFT proposal describing the Physician @ Triage and Emergency Physician Lead models including differences and potential value of each. The paper highlighted the learnings from Kelowna General Hospital and Royal Inland Hospital. Members discussed the key strategies, considerations and potential needs to initiate these within their HA.

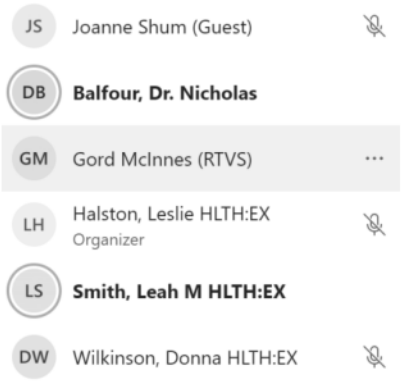
- Based on the discussions, the need for flexibility that allows the Physician to shift their focus in response to changing departmental needs must be a key consideration.
- Recognized that given the current health human resource challenge, it is unlikely there will be broad implementation to trial these models over the fall and winter period.
- Kelowna and Royal Inland hospitals will proceed with longer-term pilots and further validate the model's potential. Identification of other sites should be HA led and those that participate should be prepared to report back to share learnings.
- Noted that Physician Lead to focus on high acuity patients and manage any barriers to throughput.
- Consideration of compensation, implications of fee for service model (currently no fee codes)
- Members are also welcome to provide input via email to Leah.

Action: Leah Smith to update proposal based on comments and input from group. Leah and Gord McInnes to bring revised DRAFT proposal and PowerPoint presentation to larger Emergency Department and Hospital Capacity Task Group (EDHC) seeking support and suggestions on how to move forward. Leah to report back to working group.

Next Meeting: TBD - 2022.

November 16, 2022

Physician @ Triage Sub Working group



+ Dan Kalla

+ Keith

+ Manpreet Khaira

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Change the name: EPL – Emergency Physician Lead

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Next steps:

- bring it to the full task force and how we suggest to move forward with it.

ACTION: Change → Appendix A re KGH to reflect pilot for Emergency Department Lead

Achieving Emergency Department efficiency through Physician at Triage & Emergency Physician Lead

Presented by: Dr. Gord McInnes & Leah Smith

OBO Sub Working Group on Physician at Triage / Emergency Physician Lead

November 24, 2022

Background

Challenge: Many factors contribute to ED crowding that are beyond the direct control of the ED physicians, nurses, allied health and administration.

Possible Solution: Adding an individual provider or team whose primary role it is to support the initiation of earlier patient care and prompt discharge so that ED resources can be available for incoming patients is viewed as an *ED-controllable* approach to address crowding.

Models trialed in BC

Physician at Triage (PaT)

- Dedicated emergency physician, nurse, and unit clerk
- Conduct an initial screening examination and, where appropriate initiating diagnostic testing and treatment at triage
- May eliminate the need for a full nursing assessment and further ED care for some lower acuity (CTAS 4 and 5) patients

* Previously trialed by Kelowna General Hospital

Emergency Physician Lead (EPL)

- Senior physician lead
- Flexible role: adapting to changing needs of department
- Increase triage support for nurses, a supportive "second look" for physician colleagues, and take on a leadership role in addressing access and flow challenges

* Current trial at Royal Inland Hospital

Potential improvement / Impacts

The following indicators were examined, and all seven improved during Kelowna General Hospital's proof-of-concept trial period:

1. Reduced time to physician initial assessment
2. Decrease in British Columbia Ambulance Service offload delays
3. Reduced wait times and ED length of stay
4. Decrease in time to an inpatient bed
5. Decrease in number of patients left without being seen
6. Increased care provider satisfaction
7. Increased patient satisfaction

BC Learnings

- The introduction of PAT or EPL is not meant to replace, but rather to add to the existing triage nurse model. Resources should be supernumerary (i.e., above baseline staffing).
- Limited health human resources make the introduction of supernumerary resources difficult.
- Without a dedicated team, bottlenecks and workload pressures may result (i.e., more strain on existing triage nurses and team).
- To mitigate: Importance of a clearly defined role that also enable EPL to shift their focus in response to changing departmental needs.

Recommendations

- Experiences of Kelowna General and Royal Inland Hospitals demonstrate the potential value of introducing these models
- Introduction of PAT as a broader strategy to support the fall and winter surge 2022/23 is unlikely due to staffing challenges
- To support surge, health authorities may wish to consider introduction of an EPL role if a full PAT team cannot be recruited
- Health authorities are best positioned to identify whether this is an appropriate solution to local challenges and to identify the most suitable sites for consideration of an EPL. Consideration may be given to:
  - ED volume; hospital occupancy; time from triage to physician initial assessment
- Kelowna General and Royal Inland Hospitals expected to proceed and further validate the model's potential and further develop roles
- Value in continuing to gather evidence and experience of the applicability of PAT and EPL in BC to inform improvements to the model based on local evidence

For Discussion - Physician at Triage and Emergency Physician Lead

Background

Despite a decrease in demand for emergency department (ED) care in the early days of the COVID-19 pandemic, BC has seen a return to the pre-pandemic demand. Health human resource shortages are the primary challenge to meeting the increasing demand for emergency care. It is expected that demand will increase further into the fall and winter due to the resurgence of respiratory illness.

ED crowding also poses a risk to patient safety and prolonged wait times contribute to reduced patient satisfaction and efficiency of care. Many factors that contribute to ED crowding (ED census, consultant wait times, laboratory and radiography turnaround times, and admission wait times) are beyond the direct control of physicians, nurses, allied health providers and administrators in the ED.

One ED-controllable mechanism to address these concerns is to have an individual provider or team whose primary role it is to support the initiation of earlier patient care and prompt discharge so that ED resources can be available for incoming patients. To improve throughput and decrease patient length of stay (LOS), leave without being seen (LWBS), reduce ambulance offload delay, and triaging away from the ED, some EDs, including several in BC, have explored a variety of Physician at Triage (PAT) or Emergency Physician Lead (EPL) models with mixed results.

Discussion

While there is a range of models, the gold standard is a team-based approach that commonly includes a physician (or nurse practitioner), nurse and unit clerk, sometimes referred to as Physician at Triage (PAT). To be most effective, the PAT team is staffed in addition to baseline ED staffing. PAT typically involves a senior physician or advanced practice provider conducting an initial screening examination and, where appropriate initiating diagnostic testing and treatment at triage. The PAT may eliminate the need for a full nursing assessment and further ED care for some lower acuity (CTAS 4 and 5) patients and, in some cases, may appropriately connect patients with resources in the community (supporting triage away from the ED). The PAT team may also expedite identifying and treating the most acute patients (CTAS 1 & 2).

Some models include a degree of role flexibility that enables the PAT and/or team to respond to changing departmental needs beyond triage (i.e., ambulance offloads). This more flexible approach is particularly applicable where health human resource constraints limit hiring a full PAT team and instead rely on a lone senior physician, referred to an Emergency Physician Lead (EPL) in two facilities in Interior Health. Compared to the PAT model, the EPL takes on a broad, more flexible role in supporting triage, providing leadership and mentorship to the team, and supporting access and flow throughout the ED and hospital. For example, the EPL may begin their shift focused on discharge and refocus on triage as patient arrivals and wait time for physician assessment increases.

Examples of the introduction of PAT and EPL in Interior Health are explored below.

Learnings from Interior Health

Kelowna General Hospital – Physician at Triage

Before the COVID-19 pandemic, Kelowna General Hospital successfully piloted PAT for several long weekends during peak hours (10:00-22:00). The following indicators were examined, and all seven improved during the proof-of-concept trial period.

1. Reduced time to physician initial assessment
2. Decrease in British Columbia Ambulance Service (BCAS) offload delays
3. Reduced wait times and ED length of stay
4. Decrease in time to an inpatient bed
5. Decrease in number of patients left without being seen
6. Increased care provider satisfaction
7. Increased patient satisfaction.

Suggested clinical roles and responsibilities from Kelowna General Hospital:

Physician

- Assist in patient triage destination decisions in the ED
- For higher acuity patients, the intent to initiate therapeutic interventions as well as diagnostic and laboratory investigations as early as possible
- Priority is also on expedited handover from BCAS and police
- Collaboration with the nursing triage team as well as the patient care coordinator (PCC) to help facilitate patient flow through the ED and hospital
- Implementing simple interventions in triage might negate the need for further assessment in the ED, or triage away. Patients who are then discharged at triage must register and create a medical record which is the responsibility of the PAT to complete

Nurse

- Performs rapid triage assessment with PAT
- Initial selective documentation of vital signs in consultation with PAT
- Order management with PAT for treatments/tests/labs/meds
- Performs treatments/medication administration for PAT patients
- Manages the patient flow within the waiting room, PAT, and flow to other zones in ED
- The PAT should not be involved in the reassessment of patients once therapeutics are initiated unless there are special circumstances such as access block and patient boarding in PAT work area

Royal Inland Hospital – Emergency Physician Lead / Expeditor

Royal Inland Hospital (Kamloops) introduced an Emergency Physician Lead (EPL) to assist with patient throughput and flow during a period of overcrowding and staffing challenges. Unlike the PAT model, the EPL does not have additional supernumerary team members. While the lack of a supernumerary team has the potential to create bottlenecks, this challenge can be mitigated by ensuring flexibility in the role allowing the EPL to shift their focus in response to changing departmental needs.

Royal Inland Hospital's EPL provides increased triage support, a supportive "second look" for physician colleagues, and collaborative leadership in addressing access and flow challenges in the ED. As a result,

evaluation indicators showed decreased ED LOS, decreased inpatients who left without being seen, ambulance diversions, and time to an inpatient bed. Staff reported feeling increased support when this role was introduced during a challenging period, including high ED volumes and staffing shortages.

Learnings from Royal Inland Hospital highlight the need for:

- Clearly defined physician roles and responsibilities, that are also flexible enough to be driven by daily fluctuating demands (i.e. increased BCAS volume, increased mental health visits, additional support at triage etc.)
- Recruitment of a physician with strong communication skills who can collaborate with the entire ED team and hospital colleagues
- The ED team sees the value of and welcomes the new role
- Similar to PAT, there is a requirement to have a strong understanding of the hospital and community resources and supportive recruitment criteria

Suggested EPL role and responsibilities based on Royal Inland Hospital model include:

- Leadership role working together with the patient care coordinator (PCC) to help manage patient flow and support the physicians on shift in the ED
- Primary contact for departmental issues for the triage nurse and PCC
- Attend bed meetings with the PCC to better understand the overall bed availability in the hospital
- Available to triage, including triage away, help with difficult triage decisions and ordering directed investigations when appropriate beyond the nurse-initiated diagnostics, both for patients at triage and those waiting with BCAS
- Take all referral phone calls from sending physicians and provide support and advice to long term care home teams to avoid unnecessary transports to ED
- Provide support and advice to colleagues regarding outpatient resources that could potentially help avoid an admission (particularly valuable to locums and newer hires)
- Direct physician resources to zones requiring more support
- Assist with consultant service issues (i.e., excessive time for patient to be seen, direct referrals that have had no investigations ordered, resolving MRP issues between two services)
- Assessing admitted patients with long stays in the ED waiting for an inpatient bed (working with PCC and MRP)
- Support repatriation of patients to other sites, including back to smaller community hospitals

Key considerations and strategies to improve effectiveness

While some have endorsed PAT models as an ED-controllable mechanism to mitigate ED crowding the peer-reviewed evidence regarding their impact is mixed. Some BC trials have noted improvements to wait times for CTAS 3, 4 and 5 but increases for higher acuity patients (CTAS 1 and 2).

EDs can introduce measures to increase the effectiveness and efficiency of PAT and EPL models, as evidenced by learnings from Kelowna General Hospital and Royal Inland Hospital. Strategies to increase the efficacy may include:

- A team-based approach that includes hiring of a dedicated nurse and unit clerk as part of the PAT model. Without a dedicated team, bottlenecks and workload pressures may result (i.e., more strain on existing triage nurses).

- If sufficient resources are available to proceed with introducing an EPL but not additional staffing resources, the risk of bottlenecks may be mitigated by introducing a flexible role that enables the EPL to shift their focus in response to changing departmental needs. For example: during periods of higher congestion, the EPL may focus on identification of higher acuity patients (CTAS 1 and 2) at triage by proactively seeking out barriers to throughput (i.e. following up with radiology, supporting admissions, etc.) and rapid triage of low acuity patients, including triage away where appropriate.
- Clearly identified roles and responsibilities are needed for each team member to ensure that program objectives are met while ensuring that the model has the flexibility to address changing needs in the ED. This will also ensure that the EPL adds the most value possible.
- Access to an identified workstation and specified clinical space for physician and nursing assessments. Space constraints, including clinical assessment space, may limit hiring a full PAT team.
- The establishment of key recruitment criteria is critical, including:
    - Must be a collaborative leader with strong communication skills capable of providing leadership across the multidisciplinary ED team and respectfully liaising other hospital areas.
    - To effectively triage away from the ED and appropriately connect patients with appropriate community supports, the physician lead and team should have extensive knowledge of the community and hospital resources.
    - Respected among peers and able to provide supportive guidance to colleagues with ideally more than five years of ED experience.

The introduction of PAT or ELP are not meant to replace, but rather to add to the existing triage nurse model. To ensure successful implementation, the ED must have base staffing in place and the PAT resources should be supernumerary (i.e., above baseline staffing). The most significant barrier to implementing a full PAT model is health human resource availability, namely nursing vacancies or shortages in the ED. While there is openness to innovation and improvements in the ED, the limited health human resources available make the introduction of supernumerary resources complex in most EDs in BC during fall and winter 2022/23.

While introducing a supernumerary team is ideal, the introduction of an EPL alone has demonstrated improvements in Royal Inland Hospital's ED throughput and the team's perception of the working environment during a prologued period of overcrowding and staffing shortages. Patient feedback has also been positive – with patients noting perceived comfort and confidence with a physician assessing them at triage.

The successful recruitment and retention of physicians to these roles requires longer-term, possibly permanent funding (beyond the approach taken to providing supplemental COVID-19 funding which is generally time-limited). Additionally, it was noted that a longer recruitment timeline (beyond fall and winter 2022/23) and innovative compensation model would be required to recruit into a PAT or EPL role. It may be possible to attract physicians to take on more ED shifts to perform these roles; however, consideration should be given to mitigating the risk of destabilizing other programs.

The Sub-Working Group on Physician at Triage identified preliminary criteria for potential PAT or EPL sites. The criteria are defined as:

- Hospitals with greater than 28,000 ED visits and,
- Current occupancy rate (base beds) + surg occupancy rate ≥100% and,
- Median ED patient wait time from triage to initial physician assessment >1.0 hours.

A preliminary list of potential sites aligned with this criterion is provided in Appendix A. However, it is recognized that additional factors, such as space constraints, availability of health human resources and other factors that impact local readiness, are not reflected in this criterion.

Recommendations

Based on the assessment of Sub-Working Group on Physician at Triage, including review of relevant literature and BC experiences, introducing PAT as a broader strategy to support the fall and winter surge 2022/23 may be challenging due to health human resource constraints, particularly limits on the ability to fill existing nursing shifts.

Although PAT may not be immediately viable in the current staffing climate, there may be sufficient physician resources at some EDs to allow health authorities to consider introducing an EPL role with eventual expansion to a full PAT team. The EPL is more flexible and may be considered during surge periods in certain facilities with high bed occupancy and high ED volume and where time to initial physician assessment is greater than one hour. Identifying potential sites should be health authority-led as health authorities are best positioned to determine whether health human resources exist, local site readiness and alignment between local challenges and perceived benefits of this strategy. Sites considering EPL should develop role descriptions that target improvement to specific metrics including: reduced time to physician initial assessment; decrease in BCAS offload time; reduced wait times and ED length of stay; decrease in time to an inpatient bed; decrease in number of patients left without being seen; and, increased care patient and provider satisfaction.

The Sub-Working Group recognizes the importance of continuing to gather evidence of the applicability of PAT and EPL in BC and the importance of improving the model based on local evidence. Ideally, Kelowna General and Royal Inland Hospitals will proceed with longer-term pilots and further validate the model's potential. Hospitals that participate in an EPL trial should be prepared to report back on the learnings and program performance. As the health human resources climate improves, consideration should be given to optimizing models, including the potential addition of nursing, allied and non-clinical resources.

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Appendix A: List of potential hospitals for Physician at Triage or Emergency Physician Lead

Hospitals that meet the inclusion criteria suggested for Physician at Triage (PAT) or Emergency Physician Lead (EPL), defined as:

- Hospitals with greater than 28,000 ED visits and,
- Current occupancy rate (base beds) + surg occupancy rate ≥100% and,
- Median ED patient wait time from triage to physician initial assessment >1.0 hours

Health Authority	Hospitals that meet inclusion criteria*

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*Data was pulled on October 28, 2022. This list assumes that there is sufficient baseline staffing for the emergency department to support implementation of supernumerary resources and that focused attention is provided to inpatient discharge planning to permit greater throughput of patients.

Emergency Department and Hospital Capacity Task Group

AGENDA

November 24, 12 pm – 1 pm

Click here to join the meeting

Meeting ID: s.15; s.17

Passcode: s.15; s.17

Mandate: *The Emergency Department and Hospital Capacity Task Group (the Task Group) will develop a provincially coordinated approach and identify solutions to address capacity challenges facing emergency departments and hospitals. The work of the Task Group will include rapid identification, development and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.*

1 – Call to Order		**Lead**
12:00 – 12:15	Welcome and Ministry of Health Update	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
2 – Progress Update: Sub-working Group on Physician @ Triage and Emergency Physician Lead		**Lead**
12:15 – 12: 30	Review of findings and recommendations PAT ELP for discussion Nov 21.pdf 22 11 21 PAT EPL presentation to Task G	**Dr. Gord McInnes**, Co-President, Emergency Medicine Section, Doctors of BC **Leah Smith**, a/Executive Director, Hospital Services Branch, Ministry of Health
3 – System approach to managing fall / winter surge		**Lead**
12:30 – 12:55	Rapid fire – Regional HA roundtable on new sustainment and stabilization initiatives underway to support Fall / Winter surge and improve emergency department and hospital capacity. Each HA to be allotted 3 – 4 minutes for their update. HA updates to focus on initiatives related to the focus areas identified by the Task Group: - 24/7 patient flow and supports, - system triggers and response strategies, - triage away from ED and improved integration with UPCCs, - supportive discharge units, and - rural, remote ED and transportation. *Crosswalk document to follow*	Regional health authority representatives
4 – Next Steps		**Lead**
12:55 - 1:00	Confirm focus area of next meeting on December 8	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division

Update on new Regional HA Stabilization, Surge & Sustainment Strategies

Emergency Department & Hospital Capacity Task Group

November 24, 2022

Northern Health

Strengthen Community	Reduce Hospital Stays	Ensure Transitional & Complex Care	Support Patients, Leaders, Physicians & Staff
ED Avoidance/Admission Avoidance	Acute LOS Reduction/ ALC Designation Avoidance	ALC LOS Reduction/ Assessed Awaiting Placement Conversion Rate Reduction	Short Term Staffing Strategies Leader Support Strategies

s.13

Island Health

Strengthen Community	Reduce Hospital Stays	Ensure Transitional & Complex Care	Support Patients, Leaders, Physicians & Staff
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s.13

Vancouver Coastal Health & Providence Health

Strengthen Community	Reduce Hospital Stays	Ensure Transitional & Complex Care	Support Patients, Leaders, Physicians & Staff
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s.13

Fraser Health

Strengthen Community	Reduce Hospital Stays	Ensure Transitional & Complex Care	Support Patients, Leaders, Physicians & Staff
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Interior Health

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Withheld pursuant to/removed as

s.13

Emergency Department and Hospital Capacity Task Group

AGENDA

December 8, 2022 12 pm – 1 pm

Join on your computer, mobile app or room device

Click here to join the meeting

Meeting ID: s.15; s.17

Passcode: s.15; s.17

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1 – Call to Order		**Lead**
12:00 – 12:10	• Welcome and call for additional agenda items	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
2 – System Accountability and Emergency Department Capacity		**Lead**
12:10 – 12:30	• Presentation on HealthCare System Accountability	**Dr. Grant Innes,** Professor and Health Services Researcher, University of Calgary
3 – Roundtable - Strategies to Support Patient Communications		**Lead**
12:30 – 12:55	• Regional HA roundtable discussion	Regional health authority representatives
4 – Next Steps		**Lead**
12:55 - 1:00	• Next meeting	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division

Emergency Department & Hospital Capacity Task Group

December 8, 2022

RECORD of ACTIONS and/or DECISIONS

Attendees:

Ministry of Health

Kristy Anderson (Chair), ADM, Hospital & Provincial Health Services
Leah Smith, A/Executive Director, Hospital Services Branch
Leann Cairns, Director, Hospital Services Branch
Donna Wilkinson, Manager, Acute Care Policy and Decision
Leslie Halston, Program Analyst, Secretariat
Carley Skeels, Senior Policy Analyst

Danielle Prpich, Executive Director

PHSA: Joanne Shum, Project Director

Doctors of BC

Dr. Quynh Doan, Co-President, Section of Emergency Medicine
Dr. Gord McInnes, Co-President, Section of Emergency Medicine
Dr. Steve Fedder, Co-President, Section of Emergency Medicine
Dr. Sam Bugis, VP Physician Affairs & Specialist Practice

Health Authorities

VIHA: Manpreet Khaira, Interim Executive Director

FHA: Dermot Kelly, VP Community Hospitals and Health Services
FHA: Dr. Craig Murray, ED physician, Surrey Memorial Hospital

NHA: Penny Anguish, COO, Northern Interior Health Service Delivery Area

IHA: Richard Harding, Executive Director North Okanagan
IHA: Dr. Aron Zuidhof, ED Physician, Medical Director, Emergency Network

VCH: Dr. Eric Grafstein, Regional Department Head Emergency VCH-PHC
VCH: Lori Korchinski, Regional Director Emergency & Trauma Programs

PHC: Cindy Elliott, Program Director, Emergency and Access Services

PHSA: Sarah Bell, Chief Operating Officer, BC Children's Hospital
BCEHS: Dr. Wilson Wan, Interim Chief Medical Officer

FNHA: Gary Housty, A/Executive Director, OCNO (Regrets)
FNHA: Dr. Jeffery Beselt, Community Physician, Kwadacha and Tsay Keh Dene Nations and Emergency Physician, Campbell River

Regrets

Dr. Maureen O'Donnell, Associate Deputy Minister, Health System Innovation (Regrets)
BCPSQC: Elin Bjarnason, Senior Advisor, BCPSQC (Regrets)
VIHA: Marko Peljhan, VP Pandemic Planning, Interim VP Clinical Operations South Island, Cowichan Valley (Regrets)
VIHA: Dr. Tracey Stephenson, Medical Director, Acute Flow & Utilization (Regrets)
FHA: Laurie Leith, VP Regional Hospitals and Health Services (Regrets)
FHA: Dr. Sally Barrio, Department Head, Emergency Medicine, Surrey Memorial Hospital (alternate) (Regrets)
NHA: Dr. Patrick Rowe, Medical Lead Northern Health Emergency Room and Trauma Services (Regrets)
IHA: Diane Shendruk, VP Clinical Operations, Interior Health North (Regrets)
PHC: Norm Peters, Chief Operating Officer (Regrets)
PHSA: Susan Wannamaker, VP Clinical Service Delivery (Regrets)

Emergency Department & Hospital Capacity Task Group

December 8, 2022

PHSA: Dr. Garth Meckler, PHSA, Associate Professor Pediatrics and Emergency Medicine, University of British Columbia Division Head, Pediatric Emergency Medicine BC Children's Hospital (Regrets)
PHSA: Dr. Sim Grewal, Medical Director, Pediatric Emergency Medicine (Regrets)

Guests

Dr. Grant Innes, Professor and Health Services Researcher, University of Calgary

1. Call to Order

Kristy Anderson, Chair, called the Task Group to order and introduced Dr. Grant Innes, Professor and Health Services Researcher, Cumming School of Medicine, Calgary.

2. System Accountability and Emergency Department Capacity

Dr. Grant Innes provided a presentation on leveraging accountability strategies and overcapacity protocols to improve patient access and reduce care delays in the emergency department and hospital. Highlights included:

- Dr. Innes' outlined his work with the Nova Scotia Ministry of Health on the "Nova Scotia Health System Accountability Framework"
- Described the health care access blocks in ED, Acute Care ad Community/LTC and identified contributing factors – accountability is root failure
- Right care – right place is primary goal in all health systems
- EDs are often only alternative for patients requiring any care
- Defined areas of accountability and access and flow targets, ED 'boarding' is described as the number one issue
- Some guidelines to addressing demands include modifying allocation of key resources, matching care provided to care required, focus on the front-end and developing queue management
- Implementing a demand driven over capacity protocol, utilization of an activation and response criteria

Q and A

With issues of overcapacity failures - How do we counteract the belief that a patient would receive poor care on the ward?

- Providers at the front end don't understand system accountability. Hospital administrators understand this.
- People need to know what their accountability zone is and the responsibilities of that zone
- Nurses and doctors don't currently feel accountable for those outside their field of vision

Was LTC accountability done in NS or mostly acute care?

- Mostly acute - Huge detrimental effect on ED and acute access and on the effect on health of the patient.

Understanding what accountability means and how leaders support frontline staff carry through on accountabilities is key. Requires a frontline accountability framework.

- People must understand why they are doing what they do
- OCPs effective for 2.5 – 3 years and then disappeared because the protocol was implemented and understood at the beginning. Without an underlying accountability framework, in the future, people will forget or fail to teach new staff

How do we encourage other areas of the hospital to set up accountability frameworks?

- It requires a whole system change – bottom-up and top-down
- Process must include education and understanding at a department level.
- Talk to flow committees and nurses at the unit level as well as larger gatherings and FAQ sessions

How do you do this when your hospitals are bursting at the seams?

- Utilize the triage and reverse triage concept
- Questioning are all the patients in hospital because they need to be there? Are patients in the best place?
- Look at the care needed, and the care delivered
- Consider each program and population and how to manage the numbers
- Need to encourage inpatient leads to connect more with community ALC

Action:
Kristy and Leah to connect with Dr. Innes for further discussion and potential for the creation of an implementation plan for an accountability framework.

Action:
The slide deck presentation will be shared to the group.

3. Next Steps - Discuss focus and timing of next meeting

Next Meeting TBD

Update on new Regional HA Stabilization, Surge & Sustainment Strategies

Emergency Department & Hospital Capacity Task Group

November 24, 2022
Updated December 6, 2022

Slides include new strategies under consideration and underway across regional health authorities linked to focus areas of the Task Group. The slides are not inclusive of all surge related strategies and routine operations / activities.

Northern Health

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Interior Health

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Emergency Department and Hospital Capacity Task Group

AGENDA

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1 – Call to Order		**Lead**
12:00 – 12:05	Welcome	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
2 – System Accountability and Emergency Department Capacity		**Lead**
12:05 – 12:50	Presentation and Discussion: Leveraging accountability strategies and overcapacity protocols to improve patient access and reduce care delays in the emergency department and hospital	**Dr. Grant Innes,** Professor and Health Services Researcher, Cumming School of Medicine, University of Calgary
3 – Next Steps		**Lead**
12:50 - 1:00	Discuss focus and timing of next meeting	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division

Action item from November 24 meeting: Share sides outlining new strategies under consideration across regional health authorities linked to focus areas of the Task Group.

Surge Planning - New Initiatives.pdf

EDHC TG Meeting Notes: December 8

From: Wilkinson, Donna HLTH:EX <Donna.Wilkinson@gov.bc.ca>
To: Halston, Leslie HLTH:EX <Leslie.Halston@gov.bc.ca>
Cc: Smith, Leah M HLTH:EX <Leah.Smith@gov.bc.ca>
Sent: December 8, 2022 1:21:27 PM PST
Attachments: Agenda Emergency Department and Hospital Capacity Task Group 2022.12.08 (002).docx

Hi Leslie

Attached are my rough notes from the call we just had. Mostly screen shots of Dr. Innis' presentation but I did try and capture the QA at the end. I've also done a cut and paste of the 'chat' which is at the very end.

Reach out if you have any questions.

Donna Wilkinson, MA

A/Manager, Acute Care Policy and Programs
Hospital Services Branch, Hospital and Provincial Health Services Division
British Columbia Ministry of Health
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I am privileged and grateful to work in the territories of the Lkwungen (Esquimalt and Songhees) and Scia'new peoples. I acknowledge these lands are also shared by the Victoria Metis chartered community and other Indigenous, Metis, and Inuit people who are away from home.

Emergency Department and Hospital Capacity Task Group

AGENDA

December 8, 2022 12 pm – 1 pm

Join on your computer, mobile app or room device

Click here to join the meeting

Meeting ID: s.15; s.17

Passcode s.15; s.17

Mandate: *The Emergency Department and Hospital Capacity Task Group (the Task Group) will develop a provincially coordinated approach and identify solutions to address capacity challenges facing emergency departments and hospitals. The work of the Task Group will include rapid identification, development, and implementation of strategies to support sustainable access to high-quality acute care for patients, while addressing hospital congestion in preparation for increased demand due to COVID-19 and respiratory illness in Fall 2022 and Winter 2023.*

1 – Call to Order		**Lead**
12:00 – 12:05	Welcome	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division
2 – System Accountability and Emergency Department Capacity		**Lead**
12:05 – 12:50	Presentation and Discussion: Leveraging accountability strategies and overcapacity protocols to improve patient access and reduce care delays in the emergency department and hospital	**Dr. Grant Innes,** Professor and Health Services Researcher, Cumming School of Medicine, University of Calgary
3 – Next Steps		**Lead**
12:50 - 1:00	Discuss focus and timing of next meeting	**Kristy Anderson,** ADM, Hospital and Provincial Health Services Division

Action item from November 24 meeting: Share sides outlining new strategies under consideration across regional health authorities linked to focus areas of the Task Group.

Surge Planning - New Initiatives.pdf

WHY EDs ARE FAILLING – SLIDE 1

- Working with Nova Scotia on an accountability framework

SLIDE 2

- Healthcare access block, NOT, ED crowding
  - Ability to access timely care in the correct place
- Hospital based access block

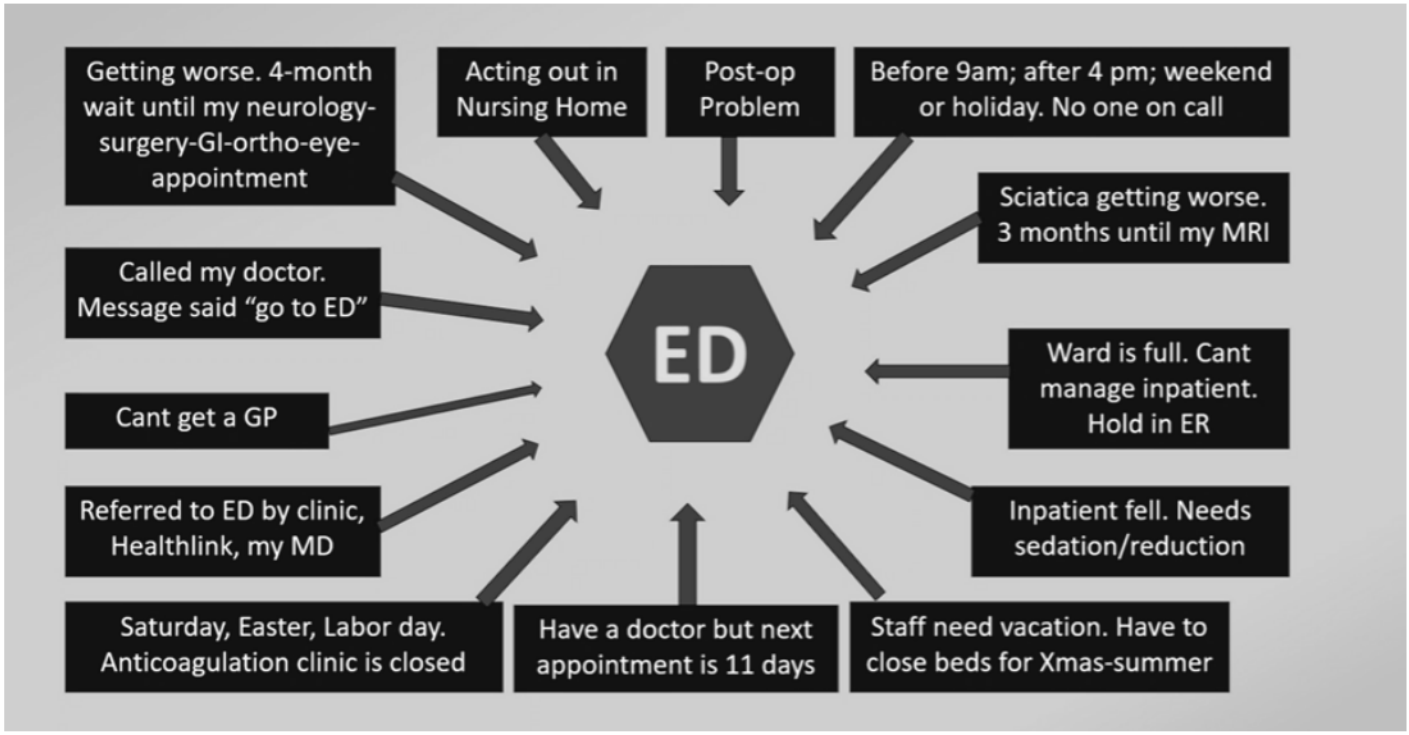
SLIDE 3

- Because care is so poor elsewhere, EDs are over utilized

SLIDE 4

- Inappropriate use of ED

SLIDE 5

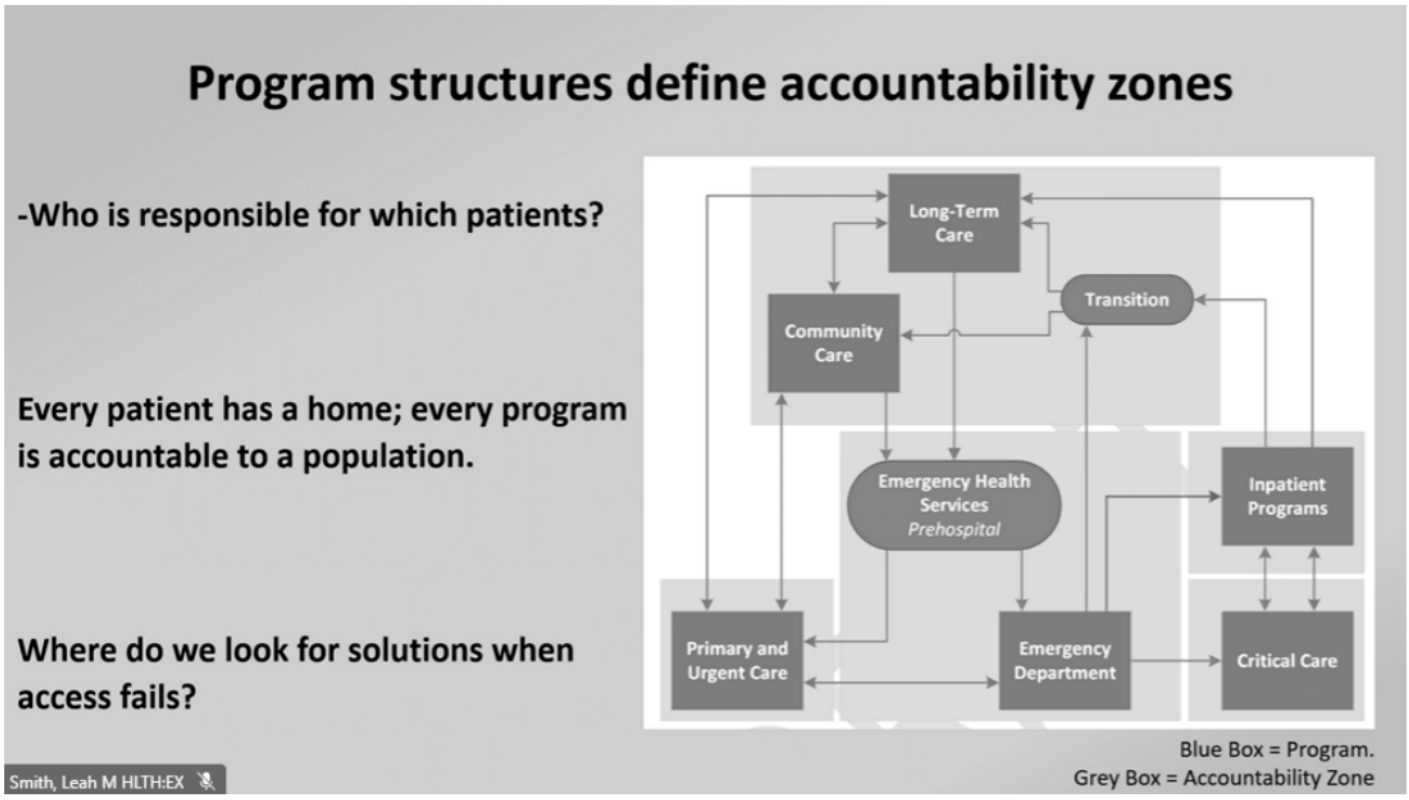


- All roads lead to the ED
- Solutions aren't in the ED

SLIDE 6

SLIDE 7

SLIDE 8



Emergency Department Accountability

- EHS accountability ends at the time of ED triage. Patients on EHS stretchers fall within the ED accountability zone.
- EDs should adopt a "no patient left behind" mentality: Patients should be triaged IN to care areas, not OUT to external waiting rooms or hallways.
- ED accountability strategies include advanced triage, matching care provision to need, adding resources at bottlenecks, unloading bottleneck servers, triage and reverse triage, and others.
- Intake and rapid assessment zones are excellent high-flow options to divert patients away from RN-staffed stretchers, the 1° ED bottleneck resource.

Inpatient Program Accountability

- Admitted patients in the ED fall into the inpatient accountability zone. Inpatient programs are responsible to care for these patients rather than leaving them in ED stretchers.
- Inpatient accountability strategies include:
  - modifying care allocation (triage, reverse triage),
  - accelerating flow,
  - managing demand (smoothing),
  - matching demand & capacity,
  - adding intake or queue management options (CDU, MAU),
  - Increasing efficiency, reducing LOS, and optimizing discharge processes.

ED boarding (blocking admitted patients in ED stretchers)

- **#1 flow constraint,**
- **#1 cause of ambulance offload delays,**
- **#1 threat to emergency care access, and**
- **#1 operational priority for First World EDs.**

Until this constraint is addressed, other efforts to reduce waiting times and ambulance offload delays will have little success.

Accountability (access and flow) targets

-Ambulance offload time in the emergency department:	30 minutes
-Time to ED triage:	10 minutes
-Time to ED physician, stratified by CTAS acuity:	0–120 min
-ED length of stay (LOS) for discharged patients:	4 hours
-Consultation interval (referral to disposition decision):	2 hours
-Inpatient transfer delay (admission order to transfer):	2 hours
-Mean hospital discharge time (w scheduled departures)	11:00 am
-Actual LOS/Expected LOS:	96%
-Hospital beds occupied by ALC patients:	<4%
- ALC time from long-term care referral to transfer:	7 days

The 1% solution to ED high acuity access

- Study of 1.8 million ED arrivals at 25 hospitals in 12 Canadian cities
- Hi-acuity access gap = # of arriving CTAS 1-3 patients x average wait time to reach an ED care space.
- Median 462 beds/hospitals (>4 million bed hours / hospital / year).
- Average ED high-acuity access gap =46,000 hours / site / year.
- ED access gap = 1.14% of inpatient capacity
- This gap could be eliminated by a 90-minute reduction in average inpatient LOS
- If viewed as a "whole hospital problem," access block could be largely mitigated by modest efficiency gains with or without new capacity

Addressing demand-capacity mismatches

- Plan for "all the patients"—not just those already in care.
- Increase efficiency or reduce lengths of stay.
- Modify the allocation of key resources (beds, people).
- Eliminate low value activities (processes, tests, procedures that do not improve patient outcomes). These account for significant utilization.
- Manage demand and smooth variability (e.g. surgical scheduling).
- Match care provided to care required. Don't over/undertreat.
- Focus on the front-end. Improve triage and reverse triage processes.
- Add resources at bottlenecks. Unload bottleneck servers.
- Rethink provider models and enhance coverage.
- Develop queue management strategies and surge contingency plans.

***Some programs will need more money, beds or providers.**

The law of mass action ("Triage in!")

- The rate of a chemical reaction is proportional to the concentration of reactants. In healthcare, the rate of a process is proportional to the number of patients queuing in front of it.
- Expediting access despite high occupancy introduces an evolutionary stressor that drives innovation and improvement.
- Timely transfer puts incoming patients in the vicinity of the "right" care providers, reduces treatment delays, reduces patient frustration, improves outcomes and makes inpatient staff aware of patients queueing for their care.
- If programs can address demand challenges by closing the door, leaving waiting patients out of sight, there is no motivation to innovate or improve. Staff develop an illusion of control that reduces the need for adaptation.
- Research shows that patients facing care delays would rather be in inpatient hallways than in ED waiting rooms.

Smith, Leah M HLTH:EX

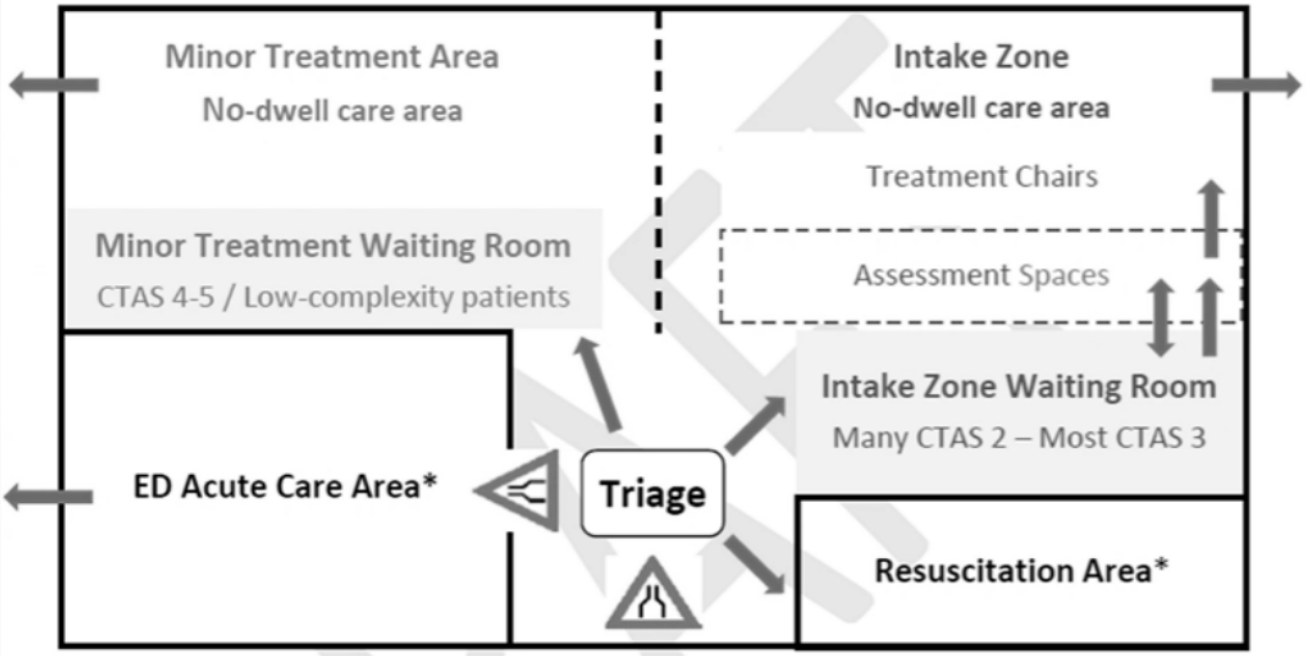
Manage Demand:

- Smooth elective admissions around natural variability. Poorly managed inflow creates demand highs that overwhelm hospital resources and trigger periods of hospital crowding
- Day-ahead demand-capacity matching:
  - Emergency admissions are predictable. Assure units are ready to accept tomorrow's incoming elective patients as well as predicted emergency admissions. The expectation to create inpatient space for anticipated next-day demand is a key accountability strategy.
- Reduce demand on inpatient beds using CDUs or MAUs.

Optimize hospital outflow: Fix discharge processes

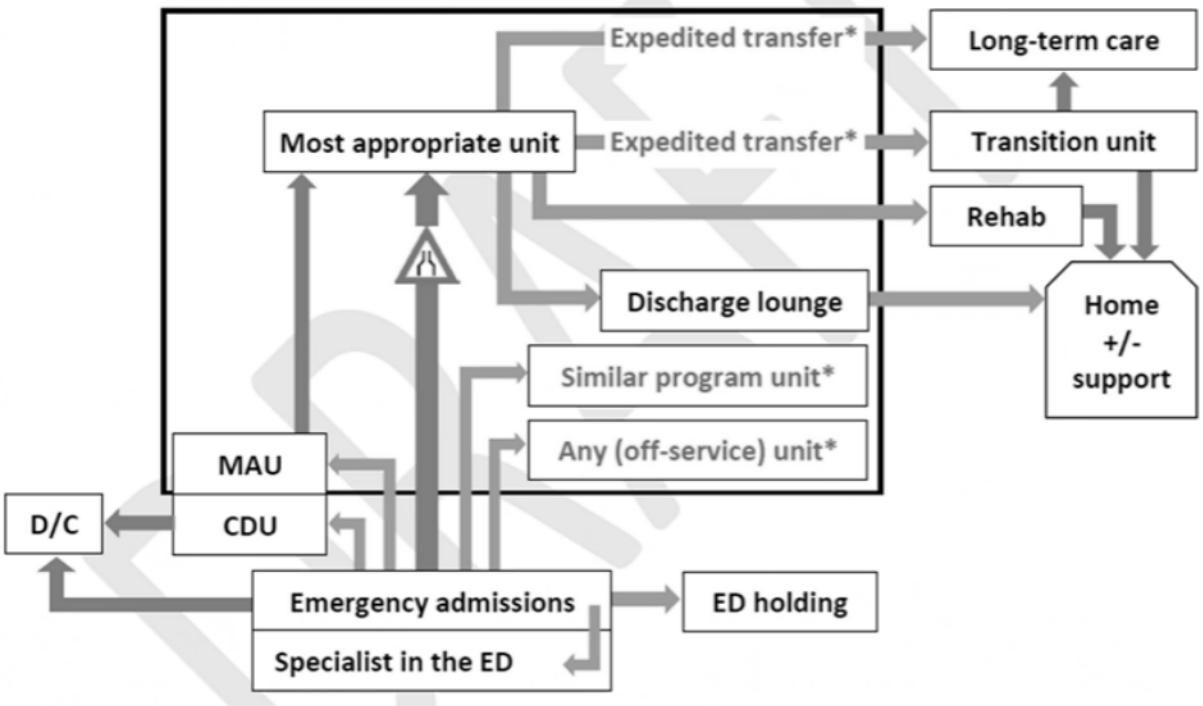
Have a plan: for surges and queue management

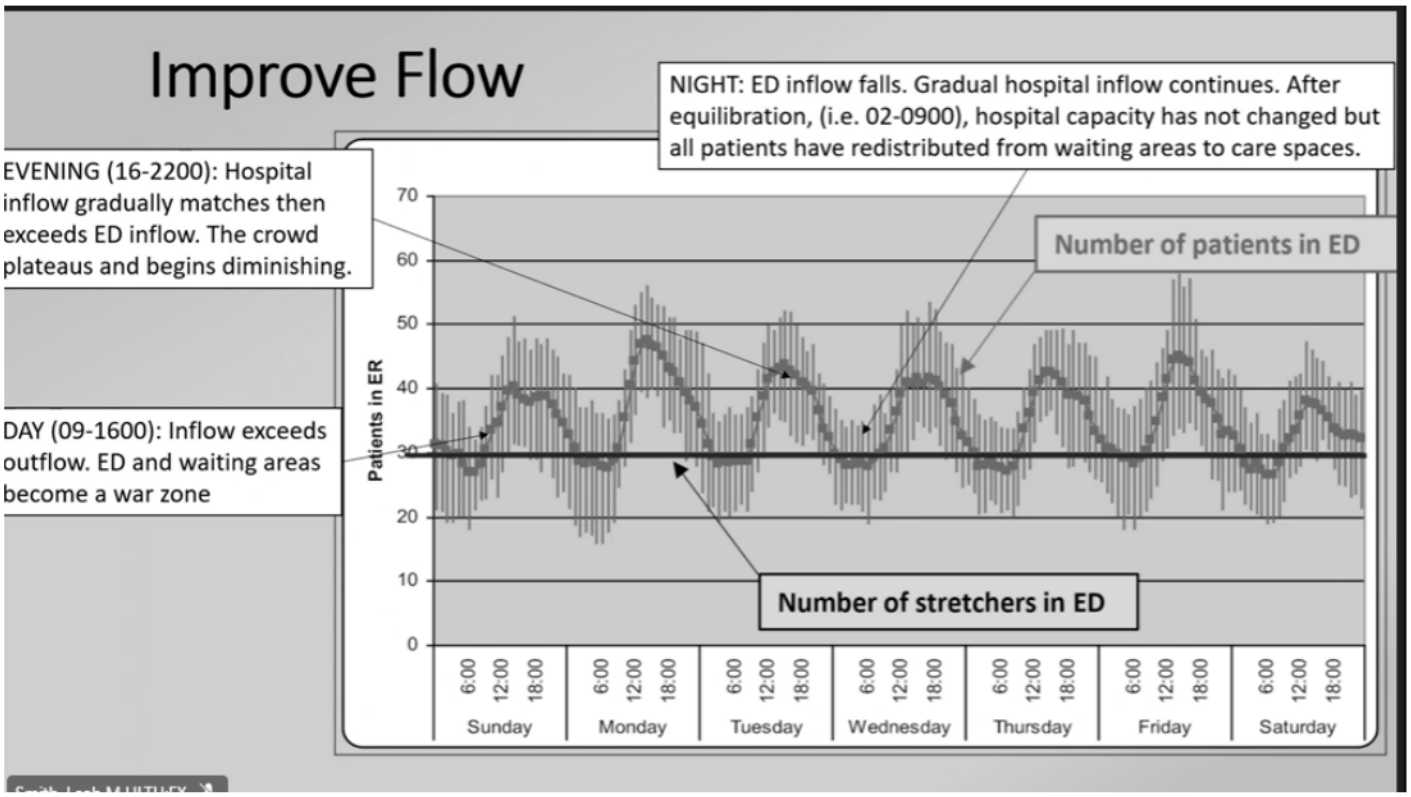
Manage demand: Divert patients from bottlenecks



= EHS-ED transition bottleneck and acute stretcher bottlenecks. * = area with acute nurse-staffed stretchers. The minor treatment area and intake zone divert patients from the acute stretcher bottleneck. The **minor treatment area** is a high-volume low-acuity single-system care zone. The **intake zone** is a high-volume mid-complexity care zone.

Manage demand: Divert patients from bottlenecks





Implement a *demand-driven* overcapacity protocol (OCP)

- The overcapacity protocol (OCP) is a push contingency to be activated when the system is overwhelmed and *pull* processes are failing..
- Most OCPs fail because they are *supply driven*: They identify a few OCP spaces on hospital units and stop inflow when these are full, regardless how many patients need care.
- Units can regain inflow control and opt out of surge responses by delaying discharges and assuring that OCP spaces remain occupied. OCP spaces become permanently occupied.
- Supply driven OCPs compromise flow rather than enhancing it.

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Dr. Innes' presentation from the EDHC Task Group Dec 8 Meeting

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Sent: December 8, 2022 3:12:58 PM PST

Attachments: BC Hospital Capacity Dec 2022.pdf

Hi Everyone,

Please find Dr. Innes' presentation from today's Emergency Department and Hospital Capacity Task Group meeting attached.

Thank you,

Katrina Wilson
Executive Administrative Assistant
ADM Kristy Anderson
HPHS | MoH
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KGH Physician at Triage Proof of Concept 2017

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